

**FINAL**

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ENVIRONMENTAL ASSESSMENT  
FOR PROPOSED ENLISTED DORMITORY  
CAVALIER AIR FORCE STATION  
NORTH DAKOTA

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**DEPARTMENT OF THE AIR FORCE**



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**AIR FORCE CENTER FOR  
ENGINEERING AND THE ENVIRONMENT**

**JULY 2011**

## ACRONYMS

°F	degrees Fahrenheit	NAGPRA	Native American Graves Protection and Repatriation Act
10 SWS	10 <sup>th</sup> Space Warning Squadron		
21 SW	21 <sup>st</sup> Space Wing	NCO	Non-Commissioned Officer
µg/m <sup>3</sup>	micrograms per cubic meter	NDAAQS	North Dakota Ambient Air Quality Standards
ABM	Antiballistic Missile		
ACHP	Advisory Council on Historic Preservation	NDDH	North Dakota Department of Health
		NDGFD	North Dakota Game and Fish Department
ACM	asbestos-containing material		
AFB	Air Force Base	NEPA	National Environmental Policy Act
AFI	Air Force Instruction	NHPA	National Historic Preservation Act
AFS	Air Force Station	NO <sub>2</sub>	nitrogen dioxide
AFSPC	Air Force Space Command	NO <sub>x</sub>	nitrogen oxide
AIRFA	American Indian Religious Freedom Act	NPDES	National Pollutant Discharge Elimination System
AST	aboveground storage tank		
AT/FP	Antiterrorism and Force Protection	NRHP	National Register of Historic Places
BMP	best management practice(s)	NSR	New Source Review
CAA	Clean Air Act	NWI	National Wetland Inventory
CEQ	Council on Environmental Quality	O <sub>3</sub>	ozone
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	ODS	Ozone Depleting Substances
		OWS	oil/water separator
		PARCS	Perimeter Acquisition Radar Characterization System
CFR	Code of Federal Regulations		
CO	carbon monoxide	Pb	lead
CWA	Clean Water Act	PM	particulate matter
DoD	Department of Defense	PM <sub>10</sub>	particulate matter equal or less than ten microns in diameter
DODI	Department of Defense Instruction		
DRMO	Defense Reutilization and Marketing Office	PM <sub>2.5</sub>	particulate matter equal or less than 2.5 microns in diameter
EA	Environmental Assessment	ppm	parts per million
EIAP	Environmental Impact Analysis Process	PSD	Prevention of Significant Deterioration
EO	Executive Order	RCRA	Resource Conservation and Recovery Act
EPCRA	Emergency Planning and Community Right-to-Know Act	ROI	Region of Influence
ERP	Environmental Restoration Program	SALT	Strategic Arms Limitation Treaty
ESA	Endangered Species Act	sf	square foot/feet
FEMA	Federal Emergency Management Agency	SHPO	State Historic Preservation Office
		SIP	State Implementation Plan
FONSI	Finding of No Significant Impact	SO <sub>2</sub>	sulfur dioxide
H <sub>2</sub> S	hydrogen sulfide	SPCC	Spill Prevention, Control, and Countermeasure
HAP	hazardous air pollutant		
HAZMAT	Hazardous Materials	SRMSC	Stanley R. Mickelsen Safeguard Complex
HMMP	Hazardous Materials Management Plan		
HVAC	Heating/ventilation/air conditioning system	tpy	tons per year
		TSP	total suspended particulates
HWMP	Hazardous Waste Management Plan	U.S.	United States
HWSF	hazardous waste storage facility	UFC	Unified Facilities Criteria
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	USACE	U.S. Army Corps of Engineers
		USAF	U.S. Air Force
		USBC	U.S. Bureau of the Census
LEED	Leadership in Energy and Environmental Design	USC	U.S. Code
		USDA	U.S. Department of Agriculture
MBTA	Migratory Bird Treaty Act	USEPA	U.S. Environmental Protection Agency
mg/m <sup>3</sup>	milligrams per cubic meter	USFWS	U.S. Fish and Wildlife Service
NAAQS	National Ambient Air Quality Standards	USGS	U.S. Geological Survey
		UST	underground storage tank
		VOC	volatile organic compound

**FINDING OF NO SIGNIFICANT IMPACT  
PROPOSED ENLISTED DORMITORY AT  
CAVALIER AFS, NORTH DAKOTA**

**Agency:** US Air Force, 21st Space Wing

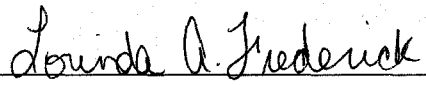
**Background:** The United States Air Force (USAF) prepared and published an *Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota* to assess the potential environmental consequences associated with proposed construction and demolition activities. The EA was prepared in accordance with requirements of the National Environmental Policy Act (NEPA) and the corresponding NEPA-implementing regulations established by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500) and USAF (32 CFR 989).

**Proposed Action and Alternatives:** The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. Only one alternative to the Proposed Action, the No Action Alternative, was developed for analysis in the EA. Under the No Action Alternative, the Proposed Action would not be implemented.

**Factors Considered in Determining That No Environmental Impact Statement is Required:** The EA analyzed potential environmental impacts of implementing the Proposed Action by taking into account all relevant environmental resource areas and conditions. The following resources were analyzed in the EA: air quality, geological resources, biological resources, water resources, cultural resources, hazardous materials and wastes, and environmental justice. USAF has examined these resource areas and found that implementation of the Proposed Action would not result in any significant impacts.

**Public Notice:** NEPA, 40 CFR §1500-1508, and 32 CFR §989 require that the public have an opportunity to review an EA before approval of Finding of No Significant Impact (FONSI) and implementation of the Proposed Action. A notice of availability for public review was published in the *Cavalier Chronicle* on 1 June 2011 initiating a 30-day review period. A copy of the Draft EA was placed in the Cavalier Central Public Library and made available electronically at [http://12.23.244.78/CavalierAFS\\_EA](http://12.23.244.78/CavalierAFS_EA) to facilitate this opportunity for public review. The review period concluded on 30 June 2011.

**Finding of No Significant Impact:** Based on the requirements of NEPA, 40 CFR §1500-1508, and 32 CFR §989, I conclude that the environmental effects of implementing the Proposed Action at Cavalier AFS would not be significant and, therefore, an Environmental Impact Statement will not be prepared. The signing of this FONSI completes the USAF Environmental Impact Analysis Process.

  
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LORINDA A. FREDERICK, Lt Col, USAF  
Commander

25 Jul 11  
Date

**ENVIRONMENTAL ASSESSMENT  
FOR PROPOSED ENLISTED DORMITORY  
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## SECTION 1

### PURPOSE AND NEED FOR ACTION

#### 1.1 INTRODUCTION

The U.S. Air Force (USAF) proposes the construction of an Enlisted Dormitory at the Cavalier Air Force Station (AFS), North Dakota, in order to provide housing for enlisted mission personnel.

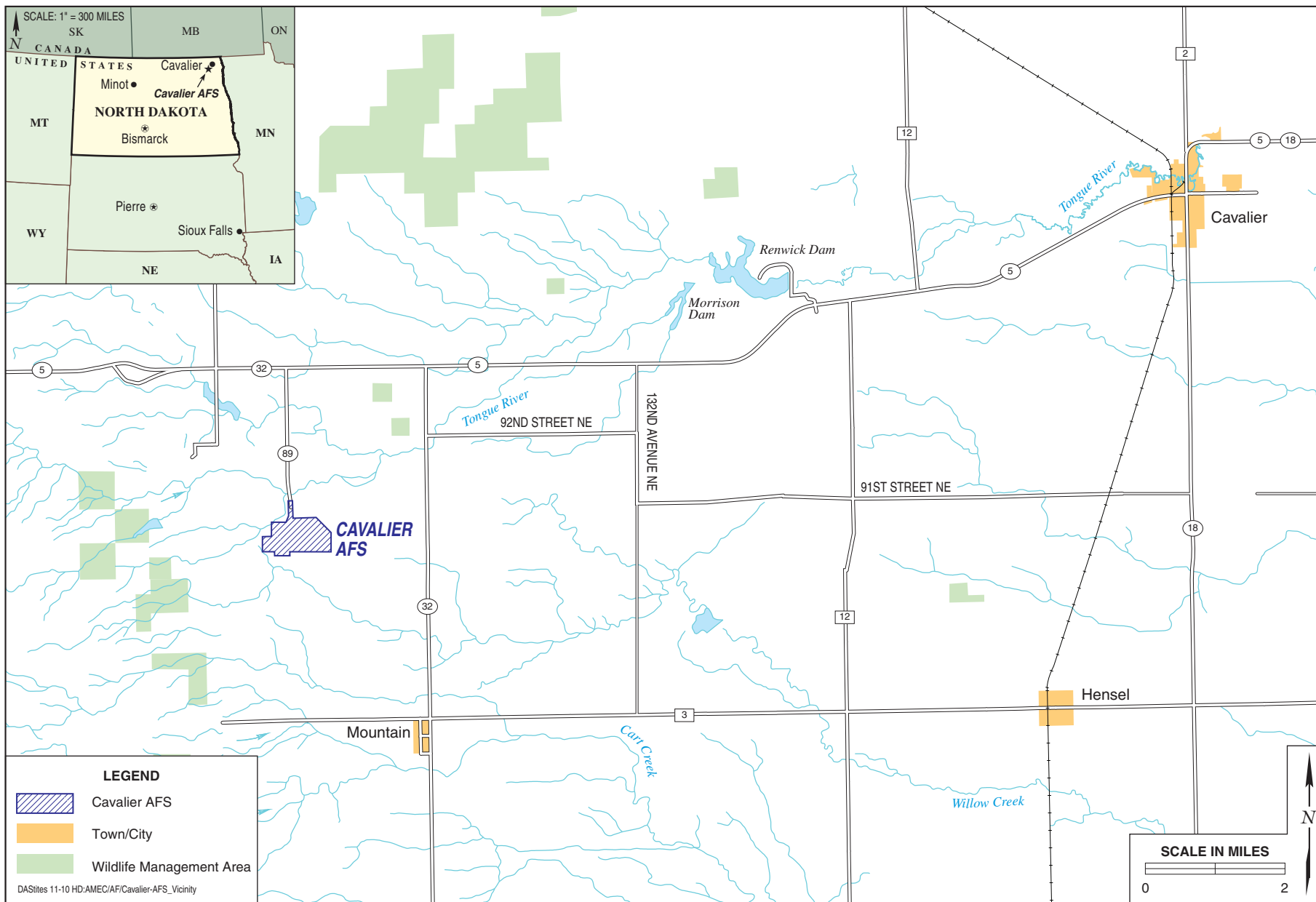
This Environmental Assessment (EA) has been prepared in accordance with regulations issued by the Council on Environmental Quality (CEQ), 32 Code of Federal Regulations (CFR) Part 989, *Environmental Impact Analysis Process* (EIAP). In accordance with CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508, Section 1502.13), this section specifies the purpose and need for the proposed Enlisted Dormitory at Cavalier AFS, North Dakota.

#### 1.2 LOCATION AND BACKGROUND

Cavalier AFS occupies 278 acres approximately 14 miles west of Cavalier, North Dakota, in Pembina County. Cavalier AFS is located approximately 15 miles south of the Canadian border, 45 miles west of the Minnesota border, and 67 air miles north-northwest of Grand Forks, North Dakota. Access to Cavalier AFS is by North Dakota State Highway 89, which intersects State Highway 5 two miles north of the Cavalier AFS main gate (Figure 1-1).

Cavalier AFS is operated by the 10th Space Warning Squadron (10 SWS) of the 21st Space Wing, Air Force Space Command (AFSPC). The facility was constructed by the U.S. Army Corps of Engineers in the early 1970s as a component of the SAFEGUARD Anti-Ballistic Missile (ABM) System. In 1977, after the ABM system was decommissioned, the USAF began to operate the facility with an Air Force mission. The 10 SWS operates Cavalier AFS with support from several civilian contractor organizations and the 319th Mission Support Squadron located at Grand Forks Air Force Base (AFB). Support from the host base is governed by the Host Tenant Support Agreement and primarily involves supplies, small construction and service contracting services, civil

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EA

engineering, security police forces, and administrative support for the military and Department of Defense (DoD) civilians who are assigned at Cavalier AFS.

Cavalier AFS is divided into two main areas: a controlled-access area for radar operations, related tactical support equipment, and most administrative offices; and a non-controlled-access area with recreation areas, living quarters, law enforcement and fire department offices, facilities maintenance shop, transportation and motor pool, and the hazardous waste storage facility. Approximately 32 military, 6 DoD civilians, and 120 contractor personnel are currently assigned to Cavalier AFS. A total of 14 USAF families live in the Military Family Housing units located at Cavalier AFS. In addition, one dormitory and one visiting quarters serve the unaccompanied military personnel. The total population of Cavalier AFS varies but is usually about 150 people. The main structure at Cavalier AFS is the Perimeter Acquisition Radar Characterization System (PARCS), housed in a hardened concrete structure. The entire facility is fenced with most site structures committed to mission activities (Figure 1-2).

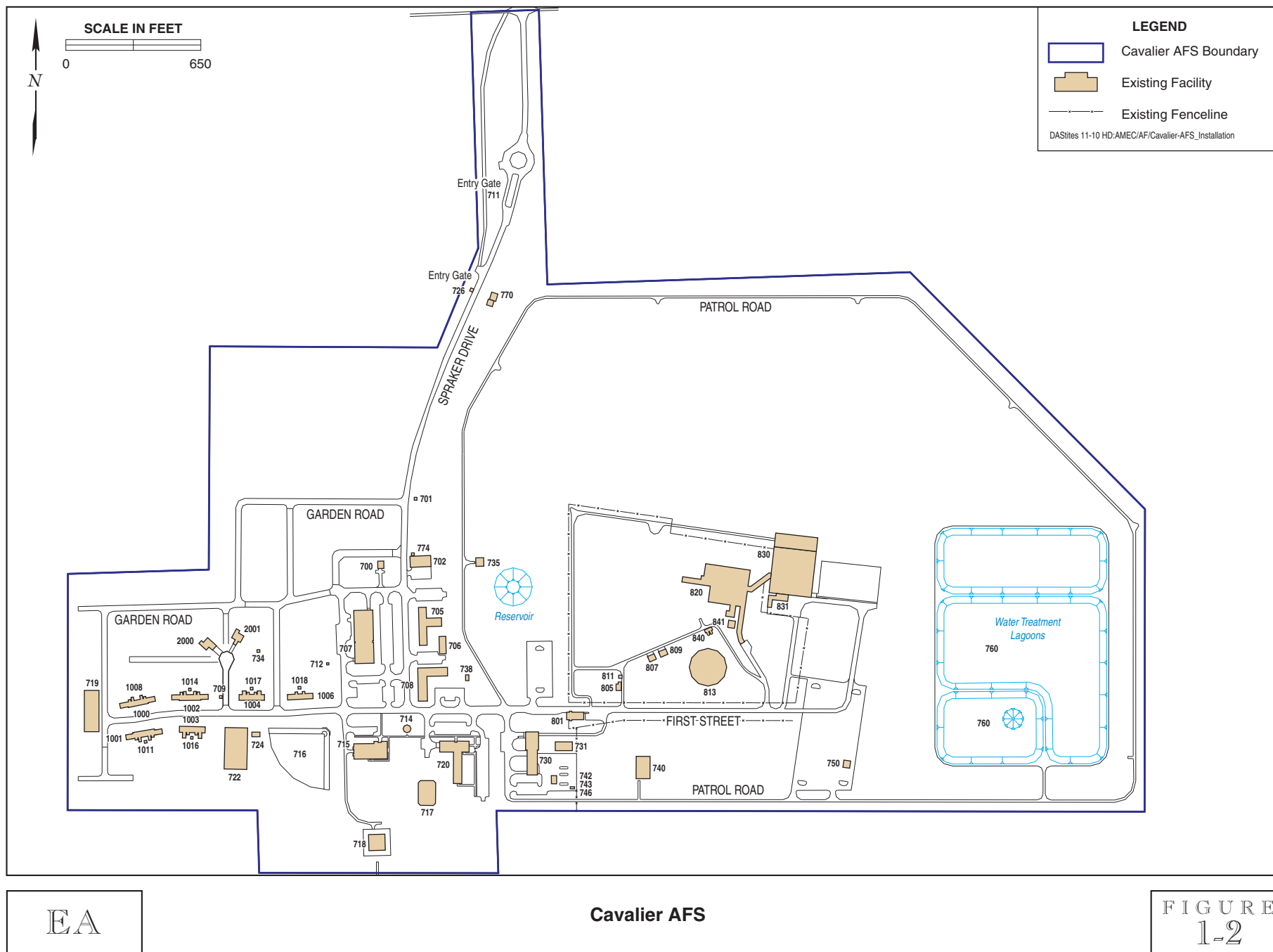
The 10 SWS's tactical mission is to detect and provide early warning of a ballistic missile attack on North America. Its collateral mission is to detect and monitor the behavior of satellites and space objects in the Earth's orbit.

### **1.3 PURPOSE AND NEED FOR PROPOSED ACTION**

**Purpose.** The *purpose* of the Proposed Action is to provide a quality dormitory facility that enhances mission effectiveness by providing proper living conditions in terms of quality of facilities, environment, privacy, and safety of personnel. This improvement in living quarters will boost morale, productivity, and career satisfaction for the enlisted personnel and officers utilizing the facility.

**Need.** The *need* for the Proposed Action is driven by inadequacies in current housing facilities. The current dormitory for unaccompanied personnel at Cavalier AFS, Building 708, was constructed in 1973 and is a single-story dorm in fair-to-poor condition that fails to meet USAF dormitory standards as well as DoD antiterrorism and force protection (AT/FP) standards. In addition, there is

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inadequate air ventilation and summer cooling as well as substandard lighting and electrical systems throughout.

#### **1.4 SUMMARY OF ENVIRONMENTAL STUDY REQUIREMENTS**

The EIAP is the process by which Federal agencies facilitate consideration of environmental regulations and through which the public and agencies have an opportunity to make known their concerns about federally proposed or funded activities. The primary legislation affecting these agencies' decision-making process is the NEPA of 1969. This act and other facets of the EIAP are briefly summarized below. Full descriptions of the regulations pertaining to the EIAP are provided in Appendix A.

**National Environmental Policy Act.** The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions. The CEQ was established under NEPA and subsequently issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR § 1500-1508, 32 CFR part 989).

**Endangered Species Act of 1973.** Established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species.

**Clean Air Act and Conformity Requirements.** Provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare (National Ambient Air Quality Standards [NAAQS]). The USEPA require the proponent of a proposed action to perform an analysis to determine if its implementation would conform to the State Implementation Plan (SIP).

**Water Resources Regulatory Requirements.** The Clean Water Act (CWA) of 1977 (33 U.S. Code [USC] §§ 1251 *et seq.*) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and Executive Order (EO) 11990, *Protection of Wetlands*, regulate

development activities in or near streams or wetlands. EO 11988, *Floodplain Management*, requires Federal agencies to take action to reduce the risk of flood damage. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

**Cultural Resources Regulatory Requirements.** The National Historic Preservation Act of 1966 (NHPA) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP) which outlined procedures for the management of cultural resources on Federal property. EO 13007, *Indian Sacred Sites*, directs Federal agencies to accommodate access to, and ceremonial use of, Indian sacred sites. The American Indian Religious Freedom Act (AIRFA) established Federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

**Antiterrorism Force Protection.** The DoD has developed AT/FP standards that are designed to reduce the likelihood of physical damage and mass casualties from potential terrorist attacks. Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Anti-terrorism Standards for Buildings*, outlines various planning, construction, and operational standards to address potential terrorist threats.

**Sustainability and Greening.** EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, strives to improve efficiency and environmental performance in Federal agencies by setting goals in the areas of energy efficiency, greenhouse gas emission mitigation, water conservation, waste management and recycling, green procurement, pollution prevention, and livable communities, among others.

**Environmental Justice and Protection of Children.** EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, ensures that citizens in either of these categories are not disproportionately affected. Potential health and safety impacts that could disproportionately affect

children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

**Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).** IICEP is a federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions. Through the IICEP process, the USAF will notify relevant Federal, state, and local agencies regarding the proposed action and incorporate comments in the EA.

## **1.5 SCOPE OF THE ENVIRONMENTAL ASSESSMENT**

This EA evaluates potential environmental impacts to the following resources that would likely be affected by implementation of the Proposed Action or its alternatives:

- Air Quality
- Geological Resources
- Biological Resources
- Water Resources
- Cultural Resources
- Hazardous Material and Wastes
- Environmental Justice

Per NEPA, those resource areas that are anticipated to experience either no or negligible environmental impact under implementation of the Proposed Action or its alternatives are not examined in detail in this EA. These environmental resources include:

- Utilities
- Noise
- Land Use
- Transportation and Circulation
- Visual Resources
- Safety and Occupational Health
- Socioeconomics

A brief summary of the reasons for not undertaking detailed analyses for these resource areas is provided below.

*Utilities.* The Proposed Action would tie into existing utility services and construction activities would be subject to standard design review requirements in order to avoid inadvertent interruption of existing subsurface utilities on base. In addition, the proposed facility is not expected to result in any substantial increase in utility demands over existing conditions.

*Noise.* The proposed Enlisted Dormitory at Cavalier AFS would not be sited in an area with high ambient outdoor noise levels and would be designed such that noise from operation of heating, ventilation, and air conditioning equipment would be reduced to achieve appropriate indoor noise.

*Land Use.* The proposed Enlisted Dormitory has been planned as part of Cavalier AFS's long-term planning efforts and has been sited in an appropriate area capable to support this kind of facility without conflicting with future development.

*Transportation and Circulation.* Construction related to the Proposed Action would result in minor temporary increases in installation traffic associated with construction vehicles and deliveries. Once constructed, the proposed Enlisted Dormitory would contribute a maximum of eight additional vehicles to the base's transportation and circulation network, resulting in a negligible effect.

*Visual Resources.* Cavalier AFS is not considered a highly sensitive visual environment and the design of the proposed facility would be consistent with existing base architecture and construction materials.

*Safety and Occupational Health.* The proposed Enlisted Dormitory would be designed in compliance with AT/FP standards and would not be sited in the Takeoff Safety Zone or the Approach/Departure Clearance Surfaces associated with the installation's helipad. In addition, construction crews would be required to have proper occupational health training.

*Socioeconomics.* Implementation of the Proposed Action would provide short-term socioeconomic benefits to the local economy, including construction employment and materials purchases. However, such short-term beneficial impacts from temporary employment gains would be negligible on a regional



scale and the Proposed Action would result in no long-term changes in employment levels or economic activity at Cavalier AFS.



## SECTION 2

### PROPOSED ACTION AND ALTERNATIVES

#### 2.1 INTRODUCTION

The USAF proposes to construct an Enlisted Dormitory at Cavalier AFS. This section describes details related to the Proposed Action and alternatives, including the No-Action Alternative.

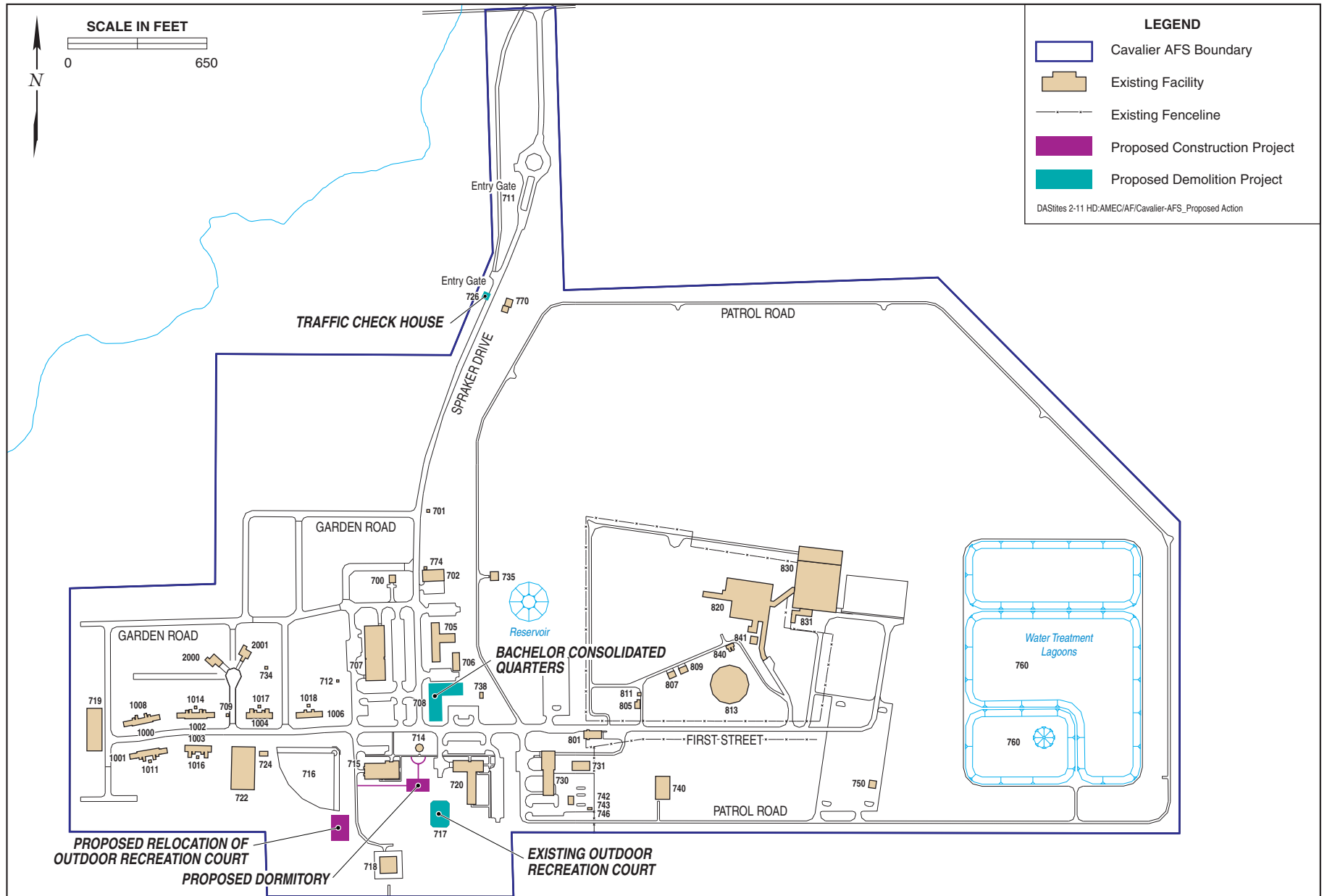
#### 2.2 PROPOSED ACTION

The Proposed Action comprises the construction of an approximately 6,098-square foot (sf), one-story Enlisted Dormitory at Cavalier AFS. The proposed eight-person facility would include four Non-Commissioned Officer (NCO) rooms, four Senior NCO/Company Grade Officer rooms, and common area to provide space for lounge seating, game and vending areas, laundry, restroom, communication room, and building support space. The Enlisted Dormitory would be constructed to the east of the existing Gymnasium (Building 715), south of First Street (Figure 2-1). In addition, an existing outdoor recreation court would be demolished and as part of the Proposed Action. The outdoor recreation court would be relocated to the west of the proposed Enlisted Dormitory. The Bachelor Consolidated Quarters (Building 708) and the Traffic Check House (Building 726) would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. As such, the potential demolition of Building 708 and 726 are included in this assessment.

##### 2.2.1 Design and Construction

The proposed dormitory would total approximately 6,098 sf and would be designed in compliance with dormitory facility requirements as specified in the *USAF Unaccompanied Design Guide* and *DoD Minimum Antiterrorism Standards for Buildings*. The dormitory facility would be constructed on reinforced concrete foundations and would have a reinforced concrete slab-on-grade floor (designed in accordance with appropriate geotechnical recommendations), steel framing, and a standing seam metal roof system. Exterior walls would be constructed

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EA

Proposed Action  
Cavalier AFS

FIGURE  
2-1

with brick masonry veneer, which would match brick masonry on adjacent facilities. Development of the Enlisted Dormitory would also include associated walkways and landscaping, totaling approximately 2,400 sf.

Design and construction of the Enlisted Dormitory would incorporate sustainable principles (per EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, October 2009), and would be registered with the U.S. Green Building Council with the goal of attaining a Silver Certification according to *Leadership in Energy and Environmental Design (LEED) Requirements for New Construction V3.0*. Sustainable design elements would be incorporated within:

- Required demolition
- Site preparation
- Reinforced concrete slab and foundation
- Steel structure
- Masonry and metal panel exterior
- Standing seam metal roof system
- Fire protection
- Heating, ventilation, and air conditioning (HVAC)
- Electrical and plumbing systems
- Utility connections

Heating and cooling of the proposed dormitory would either be accomplished using conventional HVAC equipment or potentially through ground-source heat pump technology. It is anticipated that construction of the new Enlisted Dormitory and walkways would span approximately 6 months, resulting in the disturbance of up to 12,750 sf of land for site preparation, grading, and staging activities (approximately 1.5 times the total area proposed for development).

For all development components of the Proposed Action, construction equipment would be brought onsite and would remain onsite for the duration of their use. Best management practices (BMPs) to minimize environmental impacts (e.g., soil stockpiling, use of silt berms/fences, watering of exposed soils), preparation of and adherence to management plans (e.g., Stormwater Pollution Prevention Plan, Erosion Control Plan, and Soils Management Plan), and worker training programs would be required and implemented during

construction. In addition, implementation of the Proposed Action would require a National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit, a State Air Quality Construction Activity Permit, and a General Construction Permit.

### **2.2.2 Demolition and Relocation**

The Proposed Action would also include demolition and relocation of the 9,594-sf outdoor recreation court (refer to Figure 2-1). In addition, the 10,400-sf Bachelor Consolidated Quarters (Building 708) and the 104-sf Traffic Check House (Building 726) would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The outdoor recreation court would be replaced by a 9,840-sf outdoor recreation court in a separate location just west of the proposed dormitory. Relocation of the new recreation court is anticipated to result in the disturbance of up to 14,750 sf of land for site preparation, grading, and staging activities (approximately 1.5 times the total area proposed for development). After demolition of the outdoor recreation court – and Buildings 708 and 726, if necessary –the disturbed area would be reseeded with native grasses to help prevent the spread of noxious weeds.

## **2.3 ALTERNATIVE 2: NO-ACTION ALTERNATIVE**

Under the No-Action Alternative, the USAF would not implement the Proposed Action. If the No-Action Alternative were selected, the 10 SWS would be limited by inadequate dormitory facilities which do not help to boost morale, productivity, and career satisfaction for enlisted personnel and officers. These deficiencies would hinder the 10 SWS's ability to support its current and future mission responsibilities. However, because CEQ regulations stipulate that the No Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action is implemented, this alternative will be carried forward for analysis in this EA.

## **SECTION 3**

### **AFFECTED ENVIRONMENT**

This section describes relevant existing environmental conditions for resources potentially affected by the Proposed Action and project alternatives. In compliance with guidelines contained in the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations, and 32 Code of Federal Regulations (CFR) § 989, the description of the affected environment focuses on only those resources potentially subject to impacts.

Resource descriptions focus on the following areas: air quality; geological resources; water resources; biological resources; cultural resources; hazardous materials and wastes; and environmental justice.

#### **3.1 AIR QUALITY**

This section describes air quality considerations and conditions in the area around Cavalier Air Force Station (AFS). The discussion addresses air quality standards and describes current air quality conditions in the region.

##### **3.1.1 Definition of Resource**

Air quality is affected by stationary sources (e.g., industrial development) and mobile sources (e.g., mobile motorized equipment). Air quality at a given location is a function of several factors including the quantity and type of pollutants emitted locally and regionally, and the dispersion rates of pollutants in the region. Primary factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography.

###### **3.1.1.1 Criteria Pollutants**

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the U.S. Environmental Protection Agency (USEPA) for criteria pollutants, including: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen

dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>) and 2.5 microns in diameter (PM<sub>2.5</sub>), and lead (Pb). NAAQS represent maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare.

In addition to the NAAQS, North Dakota also has standards for hydrogen sulfide (H<sub>2</sub>S). Each state must submit these regulations and control strategies for approval and incorporation into the federally enforceable State Implementation Plan (SIP). Exceeding the concentration levels within a given time period is a violation, and constitutes a nonattainment of the pollutant standard.

North Dakota has adopted a more stringent set of standards, termed the North Dakota Ambient Air Quality Standards (NDAAQS). Emissions of air pollutants from operations in North Dakota are limited to the more restrictive Federal or state standard. Table 3-1 presents the current NAAQS and the NDAAQS for criteria pollutants.

### **3.1.2 Existing Conditions**

#### **3.1.2.1 Climate**

The climate in northeastern North Dakota is typical of the northern Great Plains. Temperatures in the area are subject to large seasonal and yearly variations. Average temperatures range from approximately 2 degrees Fahrenheit (°F) in January to 68 °F in July. Generally, there are only 104 to 120 frost-free days each year. The cold and snowy weather period starts in November and continues through March. Summers are relatively mild. The predominant form of precipitation generally changes from snow to rain in April. The annual average precipitation at Cavalier AFS is approximately 19 inches per year. Precipitation monthly averages range from 0.38 inches in February to 3.15 inches in June (U.S. Air Force [USAF] 2010).



**Table 3-1. National Ambient Air Quality Standards (NAAQS) and North Dakota Ambient Air Quality Standards (NDAAQS)**

Pollutant	Averaging Time	NAAQS µg/m <sup>3</sup> (ppm) <sup>1</sup>		NDAAQS µg/m <sup>3</sup> (ppm) <sup>1</sup>
		Primary <sup>2</sup>	Secondary <sup>3</sup>	
O <sub>3</sub>	1 hr	235 (0.12)	Same	None
	8 hr <sup>4</sup>	147 (0.075)	Same	Same
CO	1 hr	40,000 (35)	None	Same
	8 hr	10,000 (9)	None	Same
NO <sub>2</sub>	AAM <sup>5</sup>	100 (0.053)	Same	Same
	1 hr	0.100	None	None
SO <sub>2</sub>	1 hr	147 (0.075)	None	715 (0.273)
	3 hr	None	1,300 (0.5)	None
	24 hr	365 (0.14)	None	260 (0.099)
	AAM	80 (0.03)	None	60 (0.023)
PM <sub>10</sub> <sup>6</sup>	AAM	None	None	None
	24 hr	150	Same	Same
PM <sub>2.5</sub> <sup>7</sup>	AAM	15	Same	Same
	24 hr	35	Same	Same
Pb	1/4 year	1.5	Same	Same
	3 months	0.15	Same	None
H <sub>2</sub> S	1 hr	None	None	280 (0.20)
	24 hr	None	None	140 (0.10)
	3 months	None	None	28 (0.02)
	Maximum Instantaneous	None	None	14 mg <sup>8</sup> (10)

Notes: <sup>1</sup>µg/m<sup>3</sup> – micrograms per cubic meter; ppm – parts per million

<sup>2</sup>National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population.

<sup>3</sup>National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impacts on the environment.

<sup>4</sup>On June 5, 1998 EPA issued the final rule identifying areas where the one-hour NAAQS for ozone is no longer applicable because there has been no current measured violation of the one-hour standard in such areas.

<sup>5</sup>AAM – Annual Arithmetic Mean.

<sup>6</sup>PM<sub>10</sub> is particulate matter equal to or less than 10 microns in diameter

<sup>7</sup>PM<sub>2.5</sub> is particulate matter equal to or less than 2.5 microns in diameter

<sup>8</sup>mg – milligrams per cubic meter

Sources: NDDH 2010; USEPA 2010a.

Winds in the vicinity of Cavalier AFS are generally from the north in the winter and from the south in the summer, with an annual average wind speed of approximately 13.4 miles per hour. April and October are the windiest months, with average wind speeds of 15.6 and 14.5 miles per hour, respectively (USAF 2010).

#### 3.1.2.2 Local Air Quality

Areas which meet the primary and secondary NAAQS are classified as in attainment. Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the primary or secondary NAAQS for any criteria pollutant is designated as nonattainment. Cavalier AFS is located in Pembina County, North Dakota, which is currently in attainment for all criteria pollutants (USEPA 2010b).

Prevention of Significant Deterioration (PSD) regulations (40 CFR Section 52.21) define air quality levels that cannot be exceeded by major stationary emission sources in specified geographic areas. Major stationary sources are usually sources that emit more than 100 tons per year (tpy) of a specific pollutant. PSD regulations establish limits on the amounts of SO<sub>2</sub> and total suspended particulates (TSP) that may be emitted above a premeasured amount.

#### 3.1.2.3 Emissions at Cavalier AFS

Air emissions at Cavalier AFS include those from stationary sources (i.e., boilers, petroleum storage tanks, and emergency generators) and mobile sources (i.e., vehicles, facilities, and grounds operations). Cavalier AFS stationary emissions are regulated under a *Title V Operating Permit* (T5-089001) issued by the North Dakota Department of Health (NDDH) that expires on January 22, 2012 (NDDH 2007). The goal of the *Title V* program is to establish a streamlined, targeted air permitting process that identifies and incorporates all applicable requirements in one document.

Air pollutants include the criteria pollutants discussed previously. Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) is generated during ground disturbing activities and during combustion. The principal source of CO and SO<sub>2</sub> is combustion. The

precursors of O<sub>3</sub> (volatile organic compound [VOC] and NO<sub>2</sub>) are also primarily emitted from combustion. Hazardous air pollutants (HAPs) include a wide range of materials or chemicals that are toxic or potentially harmful to human health. While HAPs are found in numerous products and used in many processes, few types and small amounts of HAPs are generated during internal combustion processes or earthmoving activities.

Cavalier AFS is a *major stationary source* for criteria pollutants, as the potential to emit CO and NO<sub>x</sub> is more than 250 tpy. The most recent available air emissions summary for Cavalier AFS is presented in Table 3-2.

**Table 3-2. 2006 Actual Air Emissions at Cavalier AFS**

Category	Annual Emissions <sup>1</sup> (tons per year)						
	CO	NO <sub>x</sub> <sup>2</sup>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	SO <sub>x</sub>	VOCs <sup>2</sup>	HAPs <sup>4</sup>
2006 Emissions at Cavalier AFS	56.65	145.36	3.64	2.50	5.09	16.13	0.79

Notes: <sup>1</sup>Vehicle emissions are not included in this table.

<sup>2</sup>VOCs and NO<sub>x</sub> contribute to the formation of ground-level O<sub>3</sub>.

<sup>3</sup>PM<sub>2.5</sub> emissions are included as emission factors become available.

<sup>4</sup>Includes lead emissions.

Source: Cavalier AFS 2007.

## **3.2 GEOLOGICAL RESOURCES**

### **3.2.1 Definition of Resources**

Geological resources analyzed in this study include *topography, geology, and soils*. Topography is the general shape and arrangement of a land surface, including its height and the position of its natural and human-created features. Geology describes the structure and configuration of the earth's surface and subsurface materials and their inherent properties. Soils are the unconsolidated surface materials overlying bedrock or other subsurface material, and they are typically described in terms of their composition materials, elasticity, slope, permeability, water-holding capacity, and erosion potential.

### **3.2.2 Existing Conditions**

The Region of Influence (ROI) for geological resources is limited to Cavalier AFS.

#### **3.2.2.1 Regional Setting**

Cavalier AFS is situated within the Western Lake Section of the Central Lowlands physiographic province and in the Red River Valley district. The Red River Valley is bordered by the Pembina Escarpment that more or less trends north-south approximately 35 miles west of the Minnesota-North Dakota State Line. Its physical subdivision is within the eastern margin of North Dakota forming a strip 35 to 50 miles wide trending north-south. The surface geology of the region is strongly influenced by glacial Lake Agassiz that formed when the north-flowing Red River was dammed by the retreating glacier in the Red River Valley.

There are no major faults in northeastern North Dakota. The entire state is included within Seismic Zone 0 on the seismic probability map of the United States (USAF 2010). Zone 0 is an area where earthquakes do not occur, but major distant earthquakes could produce slight damage. There are no specific seismic design requirements for Zone 0 (USAF 2010).

### 3.2.2.2 Cavalier AFS

#### *Topography*

Cavalier AFS is situated within a flat, nearly featureless lake plain that has undergone very little erosion. Elevations on the AFS range from 1,130 feet above mean sea level in the eastern portion to 1,180 feet in the western part. The regional gradient is to the northeast, away from the Pembina Escarpment, which lies about 1 mile to the west of the AFS (USAF 2010; U.S. Geological Survey [USGS] 1964).

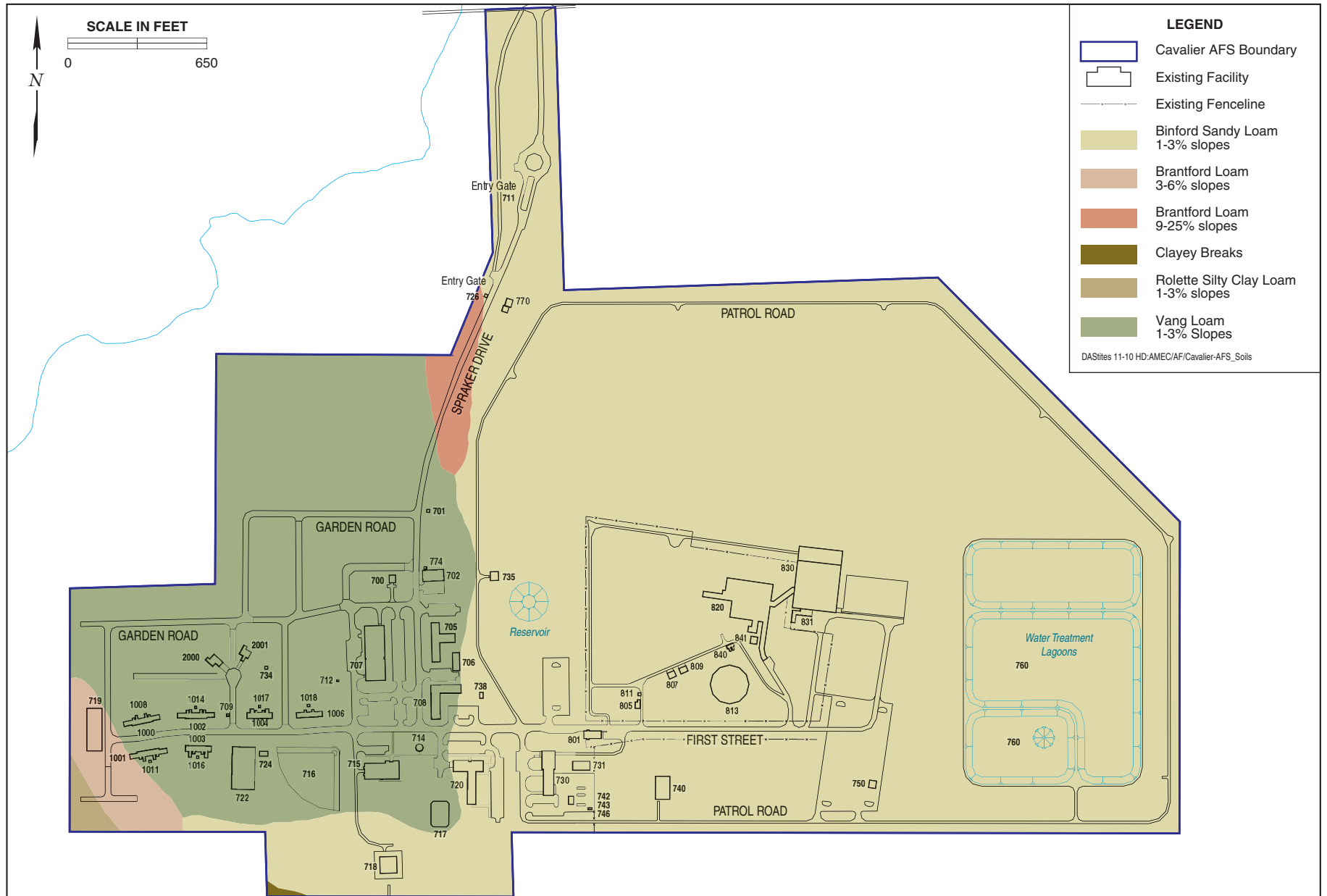
#### *Geology*

Cavalier AFS is located within a region of sand and gravel deposits that was formed in near shore and offshore environments of Lake Agassiz, a lake formed by melt water from receding glaciers which reached its largest extent around 13,000 years ago. Wave action was the dominant factor producing the landforms of this area. Sand and gravel were reworked in this near-shore area and were deposited as vast beaches. This area is gentle and rolling with a nearly flat to gently undulating surface (USAF 2010).

#### *Soils*

The primary soils on Cavalier AFS are *Brantford loam*, *Binford sandy loam*, and *Vang loam*. These series are well drained and consist of sand, silt, and gravel (U.S. Department of Agriculture [USDA] 1977, 2010). The *Brantford loam* occurs only in two locations at Cavalier AFS and is not in the area potentially impacted by the Proposed Action. Soils series in the Proposed Action site are *Binford sandy loam* with one to three percent slopes, and *Vang loam* with one to three percent slopes. The *Binford sandy loam* consists of sandy loam to a depth of 12 inches and gravelly sand to a depth of 60 inches. *Binford sandy loam* is difficult to revegetate due to droughty conditions. Binford soil series are highly susceptible to wind erosion, have low shrink-swell ratios, and fair to good compaction qualities. The *Vang loam* consists of loam to a depth of 11 inches, clay loam from 11 to 27 inches, and gravelly loam from 27 to 60 inches. Vang soil series are slightly susceptible to wind erosion, have low shrink-swell ratios, and poor to good compaction qualities (USDA 1977, 2010). Figure 3-1 depicts soils at Cavalier AFS.

No warranty is made by the USAF as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the GIS database.



### 3.3 WATER RESOURCES

#### 3.3.1 Definition of Resource

Water resources analyzed in this study include *surface water* and *groundwater*. Surface water resources include lakes, rivers, and streams that collect and distribute water from precipitation and natural or human-created water collection systems. Groundwater comprises subsurface water resources that are interlaid in layers of rock and soil and recharged by surface water seepage. Other issues relevant to water resources include watershed areas affected by existing and potential hazards related to *floodplains*.

#### 3.3.2 Existing Conditions

The ROI for water resources includes surface waters on Cavalier AFS, associated drainage basins, and groundwater underlying the installation and surrounding areas.

##### 3.3.2.1 Regional Setting

Northeastern North Dakota lies in the Central Lowlands physiographic region, which is primarily drained by the Red River of the North. This river drains 48,000 square miles of the United States, including 29,900 square miles of North Dakota. The Red River of the North forms in southeastern North Dakota, where the Otter Tail and Bois de Sioux Rivers combine (USAF 2010).

The primary tributaries to the Red River of the North near Cavalier AFS are the Pembina, Park, and Tongue rivers. The Park River starts in Cavalier County, bordering Pembina County to the west, and drains 1,010 square miles. Its waters are used for stock watering, municipal supply, recreation, and irrigation. The Pembina River starts in the Turtle Mountains and enters the Red River of the North at Pembina. It drains 1,960 miles in North Dakota and is used for stock watering, municipal supply, and recreation. The Tongue River is located about one-half mile north of Cavalier AFS and flows northeast, draining into the Pembina River (USAF 2010).

Two types of aquifers provide groundwater in northeastern North Dakota—bedrock aquifers and glacial drift aquifers. There are three major aquifers located in the vicinity of Cavalier AFS. The Dakota Aquifer is the major bedrock aquifer while the Icelandic Aquifer and the Pembina Delta Aquifer are the major glacial drift aquifers. Small aquifers within the Niobrara Formation and in Lake Agassiz beach deposits are also a source of groundwater in the region (USAF 2010).

### 3.3.2.2 Cavalier AFS

#### *Surface Water*

Natural surface water features in the vicinity of Cavalier AFS include a small intermittent stream located to the north of the installation and Willow Creek to the south (Figure 3-2). Additionally manmade impoundments exist within the boundaries of Cavalier AFS, including two water treatment lagoons located on the eastern portion of the installation and an underground reservoir.

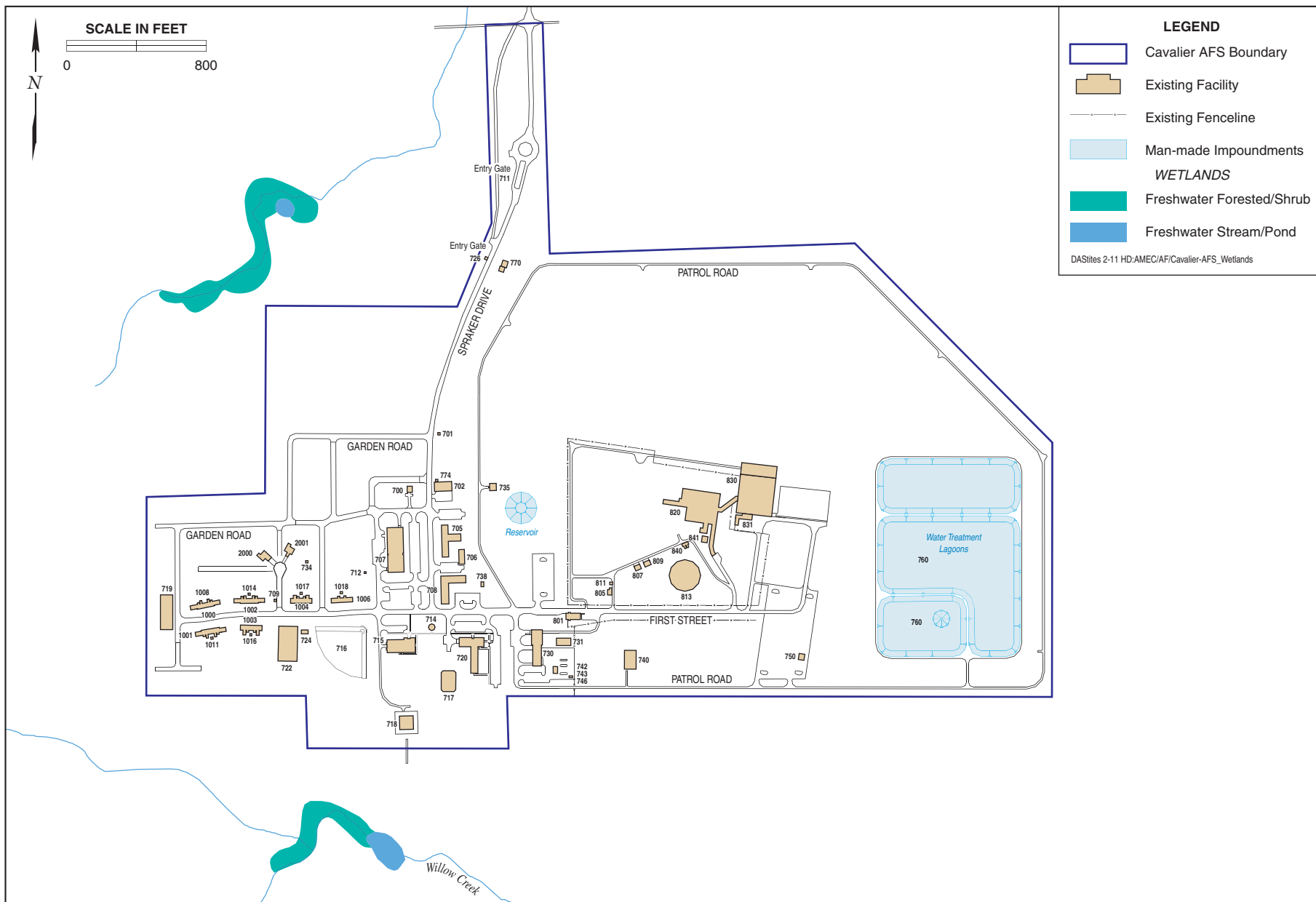
Runoff from a majority of Cavalier AFS flows south off the installation into Willow Creek, a tributary of the Park River, which travels southeast from the installation and empties into the Red River. Some runoff from the northern and western parts of the installation drains into the intermittent stream to the north of the installation, which flows north into the Tongue River (USAF 2010).

#### *Groundwater*

Cavalier AFS is underlain by the Dakota Aquifer. This aquifer is located in the Dakota Group, which generally ranges from 175 feet to 300 feet below ground level in western Pembina County and is composed of quartzose, sandstone, and shale. The Dakota Aquifer is overlain and confined by the Greenhorn and Belle Fourche Formations (both composed of shale). Recharge of the Dakota Aquifer occurs west of the installation. Water from the Dakota Aquifer is generally not used because it is moderately saline (USGS 1973).



No warranty is made by the USAF as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the GIS database.



EA

Surface Water Features in the Vicinity of Cavalier AFS

FIGURE  
3-2

### *Floodplains*

Cavalier AFS is located entirely outside of designated 100- and 500-year floodplains associated with the Tongue River to the north (Federal Emergency Management Agency [FEMA] 1987).

## 3.4 BIOLOGICAL RESOURCES

### 3.4.1 Definition of Resource

Biological resources include native or naturalized plants and animals and the habitats in which they occur. Sensitive biological resources are defined as those plant and animal species listed as threatened or endangered, or proposed as such, by the U.S. Fish and Wildlife Service (USFWS) or North Dakota Game and Fish Department (NDGFD). The Federal Endangered Species Act (ESA) of 1973 protects listed species against killing, harming, harassment, or any action that may damage their habitat. Species of concern are not protected by law, but could become listed and protected at any time.

Sensitive habitats include those areas designated by the USFWS as critical habitat protected by the ESA and sensitive ecological areas as designated by state or Federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer/winter habitats).

Migratory birds, as listed in 50 CFR § 10.13, are ecologically and economically important to the U.S., and recreational activities such as bird watching, studying, and feeding are practiced by many Americans. The *Migratory Bird Treaty Act* (MBTA), as amended, was enacted to protect migratory birds from capture, pursuit, hunting, or removal from natural habitat. Over 800 species are currently protected under the MBTA. In 2001, Executive Order (EO) 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, was issued to ensure that Federal agencies consider environmental effects on migratory bird species and, where feasible, implement policies and programs which support the conservation and protection of migratory birds.

Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the Clean Water Act (CWA) and EO 11990, *Protection of Wetlands*. Wetlands are defined by the U.S. Army Corps of Engineers (USACE) and the USEPA as, "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted

for life in saturated soil conditions” (33 CFR § 328.3[b]). Wetlands are protected as a subset of the *Waters of the U.S.* under Section 404 of the CWA; the USACE requires a permit for any activities crossing wetlands or other Waters of the U.S.

### **3.4.2 Existing Conditions**

#### **3.4.2.1 Vegetation**

Cavalier AFS is currently naturalized grassland that was cleared and seeded with non-native grasses during its construction. Prior to construction of Cavalier AFS, the land was agricultural. The Proposed Action site is a regularly mowed grass area with several ornamental trees. Grass species currently at the installation include Junegrass (*Koeleria macrantha*), quackgrass (*Elymus repens*), and some Kentucky bluegrass (*Poa pratensis*) (USAF 2009a). Tree species include aspen (*Populus spp.*), burr oak (*Quercus macrocarpa*), and other woody deciduous species.

Of the 278 land acres at Cavalier AFS, 90 acres are semi-improved grounds that are maintained to prevent erosion and control dust. Maintenance activities include mowing, fertilization, weed control, and plant disease control. Improved grounds total 15 acres and are limited to lawns around the family and unaccompanied personnel housing facilities, and other facilities. Maintenance activities include periodic mowing, water and fertilization, runoff, erosion and dust control, weed control, plant disease control, and tree and shrub maintenance. Unimproved grounds total approximately 115 acres which are managed as grassland and for the prevention and suppression of fires. Maintenance includes control of excessive or damaging dust, erosion, and poisonous and noxious weeds. The remaining 58 acres are covered by facilities and pavements (USAF 2009a).

The North Dakota Department of Agriculture, Noxious Weeds Division, develops and coordinates integrated weed management programs in the State. Weeds declared noxious are weeds that are difficult to control, easily spread, and are injurious to public health, crops, livestock, land, and other property (North Dakota Century Code, Chapter 63-01.1). Noxious weeds that have been identified at Cavalier AFS are Canada thistle (*Cirsium arvense*), leafy spurge

(*Euphorbia esula*), musk thistle (*Carduus nutans*), false chamomile (*Matricaria perforata*), and perennial sow thistle (*Sonchus arvensis*). The installation actively manages noxious weeds on site. Weed management is conducted annually with primary emphasis during the spring and summer months.

#### 3.4.2.2 Wildlife

Wildlife species observed on Cavalier AFS during a biological survey conducted in 1996 included the great blue heron (*Ardea herodias*), horned lark (*Eremophila alpestris*), eastern mourning dove (*Zenaida macroura*), moose (*Alces alces*), deer mice (*Peromyscus maniculatus*), and the Richardson ground squirrel (*Spermophilus richardsonii*).

Most birds are protected by the MBTA, which provides protection of nearly all species of birds from harm by prohibiting the destruction of active nesting habitat. Several species of ground-nesting birds have been observed on Cavalier AFS. As described in the Conservation Management Plan, procedures are in place to mark and protect these nests from disturbance when the nests are active (USAF 2009a).

#### 3.4.2.3 Sensitive Species

According to information from the USFWS and Cavalier AFS, there are no known federally threatened or endangered species on Cavalier AFS (USAF 2009a). Eight animal species and one plant species are listed in North Dakota as either threatened or endangered by the USFWS; however only the whooping crane (*Grus americana*) and the grey wolf (*Canis lupus*), both listed as endangered, are known to occur in Pembina County (USFWS 2010a).

Whooping cranes currently nest in the wild at only three locations and are not known to nest in North Dakota; however, during migration they may inhabit a variety of habitats closely tied to water resources including wetland, marsh, lake, estuarine, and pond ecosystems. Although these habitats exist in the surrounding region, whooping cranes are not known to occur within the fenced boundaries of Cavalier AFS (USAF 2009a).

Grey wolves are integral components of the ecosystems in which they typically belong. Since grey wolves can adapt and thrive in a variety of habitats including temperate forests, mountains, tundra, taiga, and grasslands, they could potentially occur in the region surrounding Cavalier AFS (USFWS 2010a). However, fencing surrounding the boundary of Cavalier AFS prevents wolves and other wildlife from entering the property (USAF 2010).

#### 3.4.2.4 Wetlands

There are no known wetlands on Cavalier AFS (USAF 2009a) (refer to Figure 3-2). *National Wetland Inventory* (NWI) maps identify a freshwater wetland and associated pond in the intermittent stream to the north of the installation, as well as a freshwater wetland and associated pond in Willow Creek to the south (USFWS 2010b).

## 3.5 CULTURAL RESOURCES

### 3.5.1 Definition of Resource

Several Federal laws and regulations have been established to manage cultural resources, including the National Historic Preservation Act (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (AIRFA) (1978), the Archaeological Resource Protection Act (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990). In addition, U.S. Department of Defense (DoD) Instruction (DODI) 4710.02, *Department of Defense Interactions with Federally-Recognized Tribes* (2006) governs DoD interactions with federally-recognized tribes and Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments* (2000), charges Federal departments and agencies with regular and meaningful consultation with Native American tribal officials in the development of policies that have tribal implications. In order for a cultural resource to be considered significant, it must meet one or more of the following criteria for inclusion on the National Register of Historic Places (NRHP):

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and: 1) that are associated with events that have made a significant contribution to the broad patterns of our history; or 2) that are associated with the lives or persons significant in our past; or 3) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or 4) that have yielded, or may be likely to yield, information important in prehistory or history” (36 CFR § 60.4).

### 3.5.2 Existing Conditions

The ROI for cultural resources is limited to Cavalier AFS.

### 3.5.2.1 Regional Setting

Prior to European contact, Native Americans inhabited the plains and plateau regions of North Dakota for thousands of years. The first Europeans explored present-day North Dakota in the 18<sup>th</sup> century and established limited trade with Native Americans. The area was incorporated into the United States as part of the Minnesota Territory and then the Dakota Territory in the 19<sup>th</sup> century.

### 3.5.2.2 Cavalier AFS

#### *History of Cavalier AFS*

In 1970, construction at Cavalier AFS began as a site for the U.S. Army Safeguard missile defense program. The system became operational five years later. The original system was composed of a Perimeter Acquisition Radar Characterization System (PARCS), the Missile Site Radar, and four Remote Sprint Launch sites. Of these six sites, the PARCS (Building 830) is the only one located on the present-day Cavalier AFS. The Missile Site Radar is located in Nekoma. These sites were designated the Stanley R. Mickelsen Safeguard Complex (SRMSC), protecting the northern United States and Canada from the “Cold War” Intercontinental Ballistic Missile threat. In 1976, with the ratification of the 1972 Anti-Ballistic Missile (ABM) Treaty, all components of the SRMSC, with the exception of the PARCS building at Cavalier AFS, were deactivated. The SRMSC was the only operational ABM system ever deployed in the free world and is recognized as a significant influence in the negotiations of the ABM and the Strategic Arms Limitation Treaty (SALT) with the Soviet Union. The PARCS was designated the Concrete Missile Early Warning System in 1977. Since December 1983, the facility has been known as Cavalier AFS.

#### *Cultural Resources at Cavalier AFS*

The Keeper of the National Register determined in 1998 that the entire PARCS/Cavalier AFS site was eligible for the National Register of Historic Places (NRHP) as an historic district, that 20 buildings or structures and an unknown number of “historic roads” were contributing elements of the historic district, and that 14 additional structures or buildings were non-contributing



elements of the historic district. In 2008, Air Force Space Command (AFSPC) reevaluated 33 of the 34 buildings and structures that had been addressed by the Keeper in 1998, and AFSPC determined that only three structures are eligible for the NRHP, the PARCS Building (Building 830), the Utility Tunnel (Building 825), and the Power Plant (Building 820). These three facilities are eligible under Criterion A for their significance in the historical context of the Cold War and under Criteria Consideration G for exceptional significance for properties less than 50 years old, as defined by *Title 36 Code of Federal Regulations (CFR) Part 60* and under guidelines described in *National Register Bulletin #15*. The PARCS Building (Building 830) is also eligible under Criterion C for its unique architecture. All other buildings and structures are recommended as not eligible under NRHP Criteria. AFSPC has also determined that the boundaries of the historic district contain the two eligible buildings and one eligible structure, rather than the entire PARCS/Cavalier AFS site as previously determined by the Keeper (USAF 2008). The State Historic Preservation Officer (SHPO) has concurred with the AFSPC reevaluation and concurs that only Buildings 820, 825, and 830 are eligible (State Historical Society of North Dakota 2009). A Programmatic Agreement regarding management activities for the three eligible buildings has been signed by the USAF and the SHPO and filed with the Advisory Council on Historic Preservation (ACHP) (USAF 2010).

The USAF conducted a cultural resources survey of Cavalier AFS in 1991 (USAF 1999a). The survey did not identify any archaeological resources and concluded that disturbance from the construction of Cavalier AFS removed any possibility of finding historic or archaeological remains on the installation.

## 3.6 HAZARDOUS MATERIALS AND WASTES

### 3.6.1 Definition of Resource

Hazardous wastes are defined by the *Resource Conservation and Recovery Act* (RCRA), as amended, as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment. Hazardous materials are defined by the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), as amended, as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, or incapacitating reversible illness; or pose a substantial threat to human health or the environment. Issues associated with hazardous materials and wastes typically center on underground storage tanks (USTs); aboveground storage tanks (ASTs); and the storage, transport, and use of pesticides, fuels and other petroleum-based products, lubricants, antifreeze, and paint solvents. When such resources are improperly used in any way, they can threaten the health and well-being of wildlife species, botanical habitats, soil systems, water resources, and people.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, USAF, through Air Force Instruction (AFI) 10-2510 and 32-7086, has dictated that all facilities develop and implement *Hazardous Materials Management Plans* (HMMPs), *Hazardous Waste Management Plans* (HWMPs), and/or *Spill Prevention, Control, and Countermeasure* (SPCC) Plans. Also, the DoD has developed the *Environmental Restoration Program* (ERP) to facilitate the thorough investigation and cleanup of contaminated sites located at military installations. These plans and programs, in addition to established legislation (e.g., CERCLA, RCRA, etc.), effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

### 3.6.2 Existing Conditions

The ROI for hazardous materials and wastes is limited to sources at Cavalier AFS.

Cavalier AFS has numerous plans that address the management, spill containment, and cleanup of hazardous materials and petroleum products. The *Hazardous Materials (HAZMAT) Plan* provides policies and procedures for handling and storing hazardous materials at the installation. An integral part of the HMMP is the HAZMAT Pharmacy Program. The HAZMAT Pharmacy is the single point of control and accountability over the requisitioning, receipt, distribution, issue and reissue of hazardous materials (USAF 2009b).

#### 3.6.2.1 Hazardous Waste Generation and Storage

Hazardous materials used, stored, or otherwise handled at Cavalier AFS include sulfuric acid, nonrestricted use pesticides, bulk fuels, and engine lubrication oil. Minimal amounts of paints and other coatings are also used at the installation. Cavalier AFS utilizes USTs and ASTs for bulk storage of diesel fuel, gasoline, and engine and vehicle lubrication oils. Paints and other coatings, also controlled under the HMMP, are purchased in containers up to 5 gallons in size and stored indoors. Least toxic products are selected and applied as much as possible and all hazardous materials are purchased, stored, and used in accordance with the HMMP (USAF 2009b).

Since December 1997, Cavalier AFS is classified as a *conditionally exempt small quantity generator*<sup>1</sup> of hazardous waste under the RCRA. Cavalier AFS operates under USEPA permit number ND9210022779. Hazardous wastes are accumulated in three (temporary) satellite accumulation areas before being transported to the station's hazardous waste storage facility (HWSF) (accumulation point), Building 700. Only licensed hazardous waste transportation and disposal companies are contracted by the Defense Reutilization and Marketing Office (DRMO) to dispose of the wastes (Cavalier AFS 2010).

Sulfuric acid is currently stored and used in the Power Plant (Building 820). Approximately 36,000 pounds are consumed annually (approximately 3,000 pounds during average months) which is an amount greater than the reportable

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<sup>1</sup> Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste (USEPA 2010a).

quantity and threshold planning quantities as specified by the *Emergency Planning and Community Right-to-Know Act* (EPCRA); therefore, spill response plans are in place in case of an incident. Spills or other incidents are most likely to occur when it is delivered by the vender and transported to the Power Plant. Spill team representatives and first responders are notified to be available prior to acid delivery and transport. Sulfuric acid is an extremely hazardous substance according to EPCRA Section 302. Sulfuric acid is purchased, stored, and used under the HMMP.

#### 3.6.2.2 Storage Tanks and Oil/Water Separators

Fuels and other petroleum-based products that are stored and used at Cavalier AFS include diesel fuel, motor gasoline, lubricating oil, and used oil. Storage of these products occurs in two diesel fuel USTs (total capacity 22,500 gallons each) and 29 ASTs for diesel fuel, lubricating oil, used oil, and gasohol unleaded regular (capacities ranging from 25 to 5,000 gallons) (Cavalier AFS 2010).

Cavalier AFS has oil/water separators (OWSs), which remove oil and other contaminants from the industrial waste water system prior to the wastewater entering the sanitary sewer system lagoons. OWSs are installed in Buildings 820, 702, and 730 (Cavalier AFS 2010).

#### 3.6.2.3 Asbestos

Asbestos is a mineral fiber that was historically added to products to strengthen them and provide heat insulation and fire resistance. When asbestos-containing material (ACM) is damaged or disturbed by repair, remodeling, or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems. Breathing high levels of asbestos has been associated with some types of cancer. Many building products contained asbestos prior to the 1970s.

AFI 32-1052, *Facility Asbestos Management*, provides direction for the management of ACM on USAF installations. AFI 32-1052 outlines requirements for establishing *asbestos management plans* and *asbestos operating plans* at USAF installations. The objective of the asbestos management plan is to document the

status and condition of ACM within an installation. The asbestos operating plan provides direction for conducting asbestos-related work within the installation.

Most of the PARCS Building (Building 830) is known to have asbestos matting between the sheet metal walls. Asbestos is also present in some utility ducts and in the insulation and paint for pipes and heating ducts. Additionally, many of the floor tiles and mastic in facilities on Cavalier AFS contain asbestos, but are in good condition. An *Asbestos Management Plan* has been published and is updated periodically as required. On-site personnel perform operations and maintenance-related activities in accordance with Federal requirements and guidelines (29 CFR 1910.1001) for Class 3 asbestos work (Cavalier AFS 2010).

#### 3.6.2.4 Environmental Restoration Program

The Defense ERP (formerly the Installation Restoration Program) was formally established by Congress in 1986 to provide for the cleanup of DoD property. The ERP requires each installation to identify, investigate, and clean up contaminated sites. All ERP sites at Cavalier AFS have been officially closed (Cavalier AFS 2010).

### 3.7 ENVIRONMENTAL JUSTICE

#### 3.7.1 Definition of Resource

In 1994, Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued to focus attention of Federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on such communities are identified and addressed. Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health and safety risks that may affect children and to ensure that Federal agencies' policies, programs, activities, and standards address environmental health risks and safety risks to children.

#### 3.7.2 Existing Conditions

The ROI for environmental justice includes Cavalier AFS and Pembina County. Table 3-3 presents a summary of environmental justice data for the geographical areas of comparison.

##### 3.7.2.1 Minority and Low-Income Populations

In order to comply with EO 12898, ethnicity and poverty status of Pembina County were compared to state and national data to determine if any minority or low-income communities could potentially be disproportionately affected by implementation of the Proposed Action or No-Action Alternative.

##### *Minority Populations*

The 2000 U.S. Census found that the population of Pembina County was 95.5 percent White. Notable other categories include Native American and Alaska Native (1.4 percent), while the Other and Multi Racial categories accounted for 2.7 percent of the total. Hispanics and Latinos comprise 3.1 percent of the County population (U.S. Bureau of the Census [USBC] 2010a).

**Table 3-3. Environmental Justice Data for Pembina County, North Dakota, and the United States (based on the 2000 U.S. Census)**

<b>Racial Data</b>	<b>Pembina County</b>	<b>North Dakota</b>	<b>United States</b>
Total Population	8,585	642,200	281,421,906
<b>Minority Population<sup>1</sup></b>	<b>387</b> <b>(4.5%)</b>	<b>49,019</b> <b>(7.6%)</b>	<b>69,961,280</b> <b>(24.9%)</b>
Hispanic/Latino <sup>2</sup>	264 (3.1%)	7,786 (1.2%)	35,305,818 (12.5%)
Asian-American	18 (0.0%)	3,606 (0.6%)	10,242,998 (3.6%)
African-American	13 (0.0%)	3,916 (0.6%)	34,658,190 (12.3%)
Native American/ Alaska Native	123 (1.4%)	31,329 (4.9%)	2,475,956 (0.9%)
Native Hawaiian/ Pacific Islander	0 (0.0%)	230 (0.0%)	398,835 (0.1%)
Other/Multi-Racial <sup>3</sup>	233 (2.7%)	9,938 (1.5%)	22,185,301 (7.9%)
Non-Minority Population <sup>4</sup>	8,198 (95.5%)	593,181 (92.4%)	211,460,626 (75.1%)
<b>Income Data</b>	<b>Pembina County</b>	<b>North Dakota</b>	<b>United States</b>
Total Population	8,585	642,200	281,421,906
<b>Percent Below Poverty Level</b>	<b>769</b> <b>(9.2%)</b>	<b>73,457</b> <b>(11.9%)</b>	<b>33,899,812</b> <b>(12.0%)</b>
<b>Age Data</b>	<b>Pembina County</b>	<b>North Dakota</b>	<b>United States</b>
Total Population	8,585	642,200	281,421,906
<b>Population Under 18</b>	<b>2,140</b> <b>(24.9%)</b>	<b>160,849</b> <b>(25.0%)</b>	<b>72,293,812</b> <b>(25.7%)</b>

Notes: <sup>1</sup>*Minorities* are persons classified by the U.S. Census Bureau as Hispanic/Latino, Asian-American, African-American, Native American, Alaska Native, Native Hawaiian, Pacific Islander, Other Race, or Multi-Racial.

<sup>2</sup> *Hispanic/Latinos* are persons of any racial background with a Hispanic/Latino cultural *heritage*.

<sup>3</sup> *Other/Multi-Racial* includes persons of two or more races and persons of races not categorized above.

<sup>4</sup> *Non-Minority Population* includes persons who are White, European-American, and/or Middle Eastern.

Sources: USBC 2010a.

North Dakota proportions are somewhat similar, but with a larger proportion of Native Americans and Alaska Natives (4.9 percent). The State's Hispanic population accounts for about 1.2 percent of the total. In contrast, the U.S. population was approximately 25 percent minority according to the 2000 U.S.

Census, with Hispanics (12.5 percent) as the largest minority group, and African Americans representing 12.3 percent of total population (USBC 2010a).

#### *Low-Income Populations*

Based on the 2000 U.S. Census data, less than 10 percent of the Pembina County population was below the poverty level, while approximately 12 percent of both the State's and the U.S. population were in this category. The 2000 per capita income for Pembina County was \$18,692, which represents nearly 87 percent of the U.S. per capita income and 105 percent of North Dakota's per capita income (USBC 2010a).

#### 3.7.2.2 Protection of Children from Environmental Health Risks and Safety Risks

In order to comply with EO 13045, the number of children under age 18 in the vicinity of Cavalier AFS was examined and compared to county, state, and national levels. Additionally, locations where populations of children may be concentrated—such as schools and child care centers—were identified for the vicinity of Cavalier AFS.

#### *Age Distribution*

There are 19 off-base residents in census blocks within 1 mile of Cavalier AFS. This population includes four children (approximately 21.1 percent) (USBC 2010b). In comparison, children in Pembina County comprise approximately 24.9 percent of the population, while children in North Dakota and the U.S. comprise 25.0 and 25.7 percent of the population respectively.

#### *Schools and Child Care Centers*

The nearest schools and child care centers are located in the City of Cavalier approximately 14 miles to the east of Cavalier AFS. These facilities include the Cavalier Public School serving grades K-12, Pembina Special Education Preschool, and a Kids Town House, Inc. daycare center (Cavalier Public School 2010; Kids Town House, Inc. 2010).



## SECTION 4

### ENVIRONMENTAL CONSEQUENCES

Environmental impacts which would result from implementation of the Proposed Action at Cavalier Air Force Station (AFS) by the U.S. Air Force (USAF) are evaluated in this section. Analyses are presented by resource area, as described in Section 3, *Affected Environment*.

The definitions for impact intensity thresholds used in this document are as follows:

- ***Negligible.*** Impacts on the resource, although anticipated, would be difficult to observe and are not measurable.
- ***Minor.*** Impacts on the resources would be detectable upon close scrutiny or would result in small but measurable changes to the resource.
- ***Moderate.*** Impacts on the resource would be easily observed and measurable, but would be localized or short-term (equal to or less than two years).
- ***Major.*** Impacts on the resource would be easily observed and measurable, widespread, and long-term (more than two years).

#### 4.1 AIR QUALITY

##### 4.1.1 Approach to Analysis

Air Force Instruction (AFI) 32-7040, *Air Quality Compliance and Resource Management*, provides a framework for ensuring that USAF actions conform to appropriate implementation plans. Section 2.4 of AFI 32-7040, *Conformity Planning*, ensures that such actions would conform to the applicable implementation plan through the U.S. Environmental Protection Agency (USEPA) General Conformity Rule. In the case of the Proposed Action, conformity with the North Dakota State Implementation Plan (SIP) would be required. Section 2.5, *National Environmental Policy Act (NEPA) and Environmental Impact Analysis Process Planning*, outlines requirements under NEPA for analysis of potential air quality impacts with respect to the Prevention of Significant Deterioration (PSD)/New Source Review (NSR) (40 Code of Federal Regulations [CFR] Part 51), hazardous air pollutants (HAP) emissions, and emissions of any other regulated pollutants under the Clean Air Act (CAA) such as Ozone

Depleting Substances (ODS) that would result from implementation of the Proposed Action. Direct and indirect emissions of criteria pollutants or their precursors associated with the Proposed Action must be calculated for all non-exempt emission sources, including mobile and stationary, as well as construction-phase emissions.

With respect to the General Conformity Rule, effects on air quality would be considered “major” if implementation of the Proposed Action would result in an increase of Pembina County’s emissions inventory by 10 percent or more, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b).

#### **4.1.2 Impacts**

##### **4.1.2.1 Proposed Action**

###### *Fugitive Dust Emissions*

Under the Proposed Action, fugitive dust would be generated during ground clearing and grading activities, as well as combustion emissions from construction-related vehicles and equipment. Dust emissions generated by such activity can vary substantially depending on levels of activity, specific operations, and prevailing meteorological conditions. Using conservatively high estimates (based on moderate activity levels, moderate silt content in affected soils, and a temperate climate), the standard dust emission factor for construction activity is estimated at 1.2 tons of dust generated per acre per month of activity (USEPA 1995). This factor is referenced to total suspended particulates, instead of specifically PM<sub>10</sub> or PM<sub>2.5</sub> (particulate matter equal to or less than 10 and 2.5 microns in diameter respectively), and consequently results in conservatively high estimates. Based on the conservatively high estimate that all of the site preparation, construction, and demolition activities – including demolition of Buildings 708 and 726 – would occur simultaneously (47,598 square feet [sf] or 1.09 acres), a projected total of about 1.31 tons per month of dust would be generated under this “worst case” scenario (refer to Appendix B).

Increased fugitive dust (i.e., PM<sub>10</sub> emissions) resulting from activities under the Proposed Action would involve short-term adverse impacts that could be

reduced through standard dust minimization practices (e.g., regularly watering exposed soils, soil stockpiling, and soil stabilization). These standard dust minimization measures can reduce dust generation by 75 percent, thereby reducing dust emissions for site preparation, construction, and demolition activities to approximately 0.33 tons per month under the Proposed Action (USEPA 1995). Although any substantial increase in PM<sub>10</sub> emissions is inherently adverse, implementation of these dust minimization measures would limit the total quantity generated during project implementation. Increased PM<sub>10</sub> emissions associated with the Proposed Action would be short-term and temporary, and would be minimized using dust suppression techniques; therefore, air quality impacts associated with fugitive dust would be negligible.

#### *Combustion Emissions*

Combustion emissions associated with construction-related vehicles and equipment under the Proposed Action would be minimal because most vehicles would be driven to and kept at work sites for the duration of construction activities. Further, as is the case with PM<sub>10</sub> emissions associated with site preparation activities, emissions generated by construction equipment would be temporary and short-term; therefore, only minor impacts to air quality would occur as a result of use and maintenance of construction-related vehicles or equipment.

Projected combustion emissions under implementation of the Proposed Action are listed in Table 4-1; they are based on the scenario of 10-hour workdays, five days per week, for simultaneous construction activity over the course of 6 months (24 weeks). Since a specific equipment list and horsepower rating for the equipment is not yet determined, emission factors were representative of a fleet-wide average, and a standard equipment list for construction was used. See *Appendix B* for a full list of assumptions and emission factors used in this analysis.

**Table 4-1. Projected Construction-Related Emissions (total tons) Associated with Implementation of the Proposed Action**

Equipment	Emissions					
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOCs
Grader	0.3402	0.9738	0.0504	0.0462	0.1656	0.0888
Loader	0.2544	0.5148	0.0516	0.0474	0.0690	0.0792
Bobcat	0.1608	0.3048	0.0324	0.0300	0.0000	0.0540
Dozer	0.7254	1.8222	0.0738	0.0678	0.2718	0.1392
Excavator	0.7800	2.7600	0.1920	0.1860	0.4440	0.2040
<b>Total Combustion Emissions</b>	<b>2.2608</b>	<b>6.3756</b>	<b>0.4002</b>	<b>0.3774</b>	<b>0.9504</b>	<b>0.5652</b>
<i>de minimis</i> threshold value	N/A	100	N/A	N/A	N/A	100

Note: See Appendix B for a full list of assumptions and emission factors used in this analysis.  
Sources: USEPA 1995, 2010b.

### *Operational Emissions*

Potential emissions from operation of facilities under the Proposed Action would be associated with electrical and natural gas power and heating for the proposed Enlisted Dormitory. However, operational emissions associated with the dormitory would be negligible on a base-wide level and overall existing stationary emission sources at Cavalier AFS would not measurably increase. In addition, in the event that ground-source heat pump technology was used to heat and cool the proposed dormitory, operational emissions would be even further reduced due to greater efficiencies. Further, long-term operation and maintenance of facilities associated with the Proposed Action are expected to generate negligible additional vehicle traffic and related operational emissions. No additional personnel would be required under the Proposed Action; therefore, vehicular emissions would not increase under the Proposed Action. Air quality impacts associated with operational emissions would be negligible.

### *General Conformity*

Pembina County is currently in attainment for all criteria pollutants. Therefore, the only applicable *de minimis* thresholds are 100 tons per year (tpy) for NO<sub>x</sub> and VOCs (USEPA 2010b). Since the anticipated NO<sub>x</sub> and VOC emissions associated

with construction of the Proposed Action fall well below these levels (i.e., 6.38 and 0.57 tpy of NO<sub>x</sub> and VOCs, respectively), a General Conformity determination would not be required. In addition, criteria pollutant emissions resulting from the Proposed Action would not exceed 10 percent of the regional emissions inventories. Implementation of the Proposed Action would therefore result in negligible impacts regarding General Conformity.

#### 4.1.2.2 Alternative 2: No-Action Alternative

If the No-Action Alternative were selected, short-term temporary air quality impacts anticipated to occur during implementation of the Proposed Action would not occur and air quality conditions and emissions associated with ongoing operations at Cavalier AFS would remain as described in Section 3.1, *Air Quality*.

## 4.2 GEOLOGICAL RESOURCES

### 4.2.1 Approach to Analysis

An impact to geological resources would be significant if implementation of the Proposed Action or a project alternative would: 1) increase potential occurrences of erosion, siltation, or geological hazards (e.g., landslides, etc.); 2) incorporate engineering or construction techniques that do not adequately address potential geologic hazards; or, 3) expose people or structures to major geological hazards. Generally, impacts with regard to geological resources can be avoided or minimized if proper construction techniques, erosion and siltation control measures, and structural engineering designs are incorporated into project development.

### 4.2.2 Impacts

#### 4.2.2.1 Proposed Action

Implementation of the Proposed Action would include excavation and site preparation activities associated with construction. All excavation and site preparation associated with construction of the Enlisted Dormitory would occur on *Vang loam* soils, while the outdoor recreation court would be relocated on *Binford sandy loam* soils (refer to Figure 3-1), which is highly susceptible to wind erosion (U.S. Department of Agriculture [USDA] 1977, 2010).

In order to minimize potential erosion, siltation, and soil compaction during excavation, site preparation, and other construction activities, best management practices (BMPs) would be incorporated as part of the Proposed Action, including:

- Incorporating erosion and siltation prevention measures (e.g., watering for dust suppression, use of netting and silt fencing, etc.);
- Covering stockpiled soils and excavated areas during rains; and,
- Limit the use of heavy equipment to the maximum extent practicable.

With implementation of the BMPs described above, construction-related impacts to soils would be minimal and localized to the project footprint. Therefore, implementation of the Proposed Action would result in minor, site-specific

impacts to soils over the short-term. In addition, the potential implementation of ground-source heat pump technology would result in minor impacts to geological resources over the short-term, as construction of a ground-source heat pump would not increase the risk or exposure of people or buildings to geological hazards.

Once the proposed facilities are operational, potential impacts to soils would be minimal, and any potential excavation or other soil disturbance due to future construction or other maintenance activities would also incorporate applicable BMPs listed above. Further, all project components would be engineered so that potential impacts from erosion, siltation, and geological hazards (e.g., landslides, etc.) would be minimized. Therefore, implementation of the Proposed Action would result in negligible long-term impacts to geological resources.

Project construction activities proposed would occur on lightly disturbed land (i.e., vegetation is regularly mowed and consists of non-native grasses and ornamental trees). Topography within the proposed construction areas is generally level and does not pose an erosion hazard. Therefore, impacts to topography resulting from implementation of the Proposed Action would be negligible.

#### 4.2.2.2 Alternative 2: No-Action Alternative

Under the No-Action Alternative, no construction, demolition, or relocation activities would be implemented. Geological conditions would remain as described in Section 3.2, *Geological Resources*. No impacts to geological resources or soils would be anticipated under the No-Action Alternative.

## **4.3 WATER RESOURCES**

### **4.3.1 Approach to Analysis**

An impact to water resources would be significant if implementation of the Proposed Action or a project alternative would: 1) reduce water availability to or interfere with the supply of existing users; 2) create or contribute to the overdraft of groundwater basins or exceed decreed annual yields of water supply sources; 3) adversely affect surface or groundwater quality; 4) threaten or damage unique hydrologic characteristics; or, 5) violate established laws or regulations that have been adopted to protect or manage water resources, including management plans adopted by Cavalier AFS. Since the footprints of the Proposed Action and project alternatives would be located outside of any designated floodplains (refer to Figure 3-2 in Section 3.3, *Water Resources*), further analysis of floodplains has been eliminated.

### **4.3.2 Impacts**

#### **4.3.2.1 Proposed Action**

##### *Surface Water*

Construction activities associated with the Proposed Action could potentially increase turbidity of nearby surface water due to increased airborne dust and siltation from soil erosion. Runoff from much of Cavalier AFS, including the Proposed Action site, flows south off of the installation into Willow Creek and eventually into the Red River. Any sediment entering Willow Creek could impact the Red River and its tributaries. The use of standard BMPs would reduce the potential for erosion and sedimentation. Practices to reduce potential erosion include silt traps, chemical stabilizers, and watering of dry disturbed soil to minimize dust. Because the Proposed Action would disturb between 1 and 5 acres, a Phase II National Pollutant Discharge Elimination System (NPDES) permit would be required for construction. Implementation of the Proposed Action would therefore result in minor impacts to surface waters.



## *Groundwater*

Potential impacts to groundwater could result from spills of diesel fuel or lubricants from construction equipment. However, the amount of any potential spill would be minor and the extent that a spill could potentially travel would be severely limited by areas of silt and clay deposits, and by shale bedrock underlying the Proposed Action site. Any potential spill, however unlikely, would be diluted and filtered by silt and clay sediments to the east of Cavalier AFS. Any potential spills would be the responsibility of the construction contractor and clean up would be conducted in compliance with the *Spill Prevention, Control, and Countermeasure* (SPCC) Plan. Therefore, potential short-term impacts to groundwater would be negligible.

Once operational, there would be no long-term increase in personnel and a negligible increase in water use associated with the Proposed Action. In addition, implementation of the Proposed Action would result in a net decrease of approximately 4,160 sf of developed area at the installation in the event that demolition of Buildings 708 and 726 is deemed necessary by project funding requirements. Therefore, long-term impacts to surface water and groundwater recharge would be beneficial but negligible.

### 4.3.2.2 Alternative 2: No-Action Alternative

Under the No-Action Alternative, no construction, demolition, or relocation activities would be implemented. Water resources would remain unchanged from baseline conditions as described in Section 3.3, *Water Resources*, and no impacts would occur.

## **4.4 BIOLOGICAL RESOURCES**

### **4.4.1 Approach to Analysis**

Determining the magnitude of potential impacts to biological resources is based on 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; 2) the proportion of the resource affected relative to its occurrence in the region; 3) the sensitivity of the resource to proposed activities; and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas or disturbance causes reductions in population size or distribution.

Potential physical impacts such as habitat loss, noise, and impacts to surface water were evaluated to assess potential impacts to biological resources resulting from implementation of the Proposed Action and identified alternatives.

### **4.4.2 Impacts**

#### **4.4.2.1 Proposed Action**

##### *Vegetation*

The Proposed Action site is currently a grassy area maintained by mowing and is not considered critical habitat. Construction, demolition, and relocation activities would result in minor impacts to vegetation. However, no critical or sensitive habitat would be disturbed as part of the Proposed Action. Additionally, BMPs and control measures would be implemented to ensure that impacts to vegetation are kept to a minimum. Once construction is complete, all disturbed areas would be landscaped and reestablished with native vegetation. Additional measures proposed to minimize impacts could include using straw bales, silt fences, silt traps, or diversion structures and covering stockpiles during grading activities to contain waterborne erosion and reduce or prevent sediment from reaching storm sewers or ditches. The installation would continue to manage the area for noxious weeds annually and on an as-needed basis. Therefore, implementation of the Proposed Action would result in minor impacts to vegetation.

### *Wildlife*

Implementation of the Proposed Action could potentially impact wildlife (e.g., mice and ground squirrels) through permanent habitat alteration and temporary disturbance due to increased noise and human presence. Construction activities could temporarily displace wildlife from otherwise suitable habitat in the immediate vicinity of the project area; however, any wildlife disturbed by construction activities or displaced by habitat loss could temporarily or permanently relocate to a similar habitat nearby. Much of proposed construction activities would occur adjacent to existing roadways and developed areas, which currently provide limited wildlife habitat. Further, Cavalier AFS is surrounded by fencing to deter wildlife from entering the property. Once constructed, operation and maintenance of the Enlisted Dormitory and outdoor recreation court would have a negligible impact on wildlife at Cavalier AFS and the surrounding region. Therefore, implementation of the Proposed Action would constitute a negligible impact to wildlife.

### *Sensitive Species*

Construction under the Proposed Action would occur on previously disturbed land within the built-up portion of the installation. This area does not include optimal habitat for any of the transient Federal- or state-listed species that may occur in Pembina County. No threatened or endangered species are known to occur on Cavalier AFS; therefore, impacts to sensitive species would be negligible.

### *Wetlands*

There are no wetlands located within Cavalier AFS or adjacent to the Proposed Action site. Further, implementation of BMPs and control measures would reduce or prevent sediment transport from the site and minimize the possibility of impacting wetlands in the region; therefore, implementation of the Proposed Action would have negligible impacts on wetland resources.

#### 4.4.2.2 Alternative 2: No-Action Alternative

Implementation of the No-Action Alternative would result in no changes to the existing vegetation, wildlife, wetlands, or sensitive species occurring at Cavalier AFS. Conditions would remain as described in Section 3.4, *Biological Resources*.

## 4.5 CULTURAL RESOURCES

### 4.5.1 Approach to Analysis

Cultural resources are subject to review under both Federal and state laws and regulations. Section 106 of the National Historic Preservation Act (NHPA) of 1966 empowers the Advisory Council on Historic Preservation to comment on Federally-initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion on the National Register of Historic Places (NRHP).

Once cultural resources have been identified, significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the NHPA.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by 1) physically altering, damaging, or destroying all or part of a resource; 2) altering the characteristics of the surrounding environment that contribute to resource significance; 3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or 4) neglecting the resource to the extent that it is deteriorated or destroyed.

Direct impacts can be assessed by identifying the type and location of a Proposed Action or project alternative and determining the exact locations of cultural resources that could be affected. Indirect impacts primarily result from the effects of project-induced population increases and the resultant need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. These activities and facilities' subsequent use can disturb or destroy cultural resources.

Discussions of potential impacts associated with the Proposed Action and project alternatives focus on Cavalier AFS, as described in Section 3.5, *Cultural Resources*.

## 4.5.2 Impacts

### 4.5.2.1 Proposed Action

No known cultural resources have been identified in the area proposed for construction of the Enlisted Dormitory or relocation of the outdoor recreation court. A cultural resources survey conducted in 1991 did not identify any archaeological resources and concluded that disturbance from the construction of Cavalier AFS removed any possibility of finding historic or archaeological remains on the installation (USAF 1999a). The project area has been previously disturbed by past installation operations; therefore, digging at this location is not anticipated to unearth any cultural resources. In addition, the Bachelor Consolidated Quarters (Building 708) and the Traffic Check House (Building 726), both being assessed for potential demolition due to possible funding requirements, have previously been determined not to be eligible for the NRHP (State Historical Society of North Dakota 2009). Further, the three structures (Building 830, Building 825, and Building 820) which are considered eligible for the NRHP at Cavalier AFS would not be impacted by construction under the Proposed Action. Therefore, implementation of the Proposed Action would have negligible impacts to cultural resources.

Should unknown archaeological resources be uncovered during construction activities, the Air Force would follow procedures described in the Integrated Cultural Resources Management Plan for Cavalier AFS (USAF 2008) and in AFI 32-7065, Cultural Resource Management, for coordination with the North Dakota State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation (ACHP) and designated representatives of affected federally recognized Native American tribes in coordination with SHPO/SCHP.

### 4.5.2.2 Alternative 2: No-Action Alternative

If the No-Action Alternative were selected, baseline conditions would remain as described in Section 3.5, *Cultural Resources*.

## **4.6 HAZARDOUS MATERIALS AND WASTES**

### **4.6.1 Approach to Analysis**

Numerous local, state, and federal laws regulate the storage, handling, disposal, and transportation of hazardous materials and wastes; the primary purpose of these laws is to protect public health and the environment. The severity of potential impacts associated with hazardous substances is based on their toxicity, ignitability, and corrosivity. Impacts associated with hazardous materials and wastes would be considered major if the storage, use, transportation, or disposal of hazardous substances substantially increases the human health risk or environmental exposure. Impacts to identified Environmental Restoration Program (ERP) sites would be considered major if the Proposed Action or project alternative disturbed or created contaminated sites resulting in adverse effects to human health or the environment.

### **4.6.2 Impacts**

#### **4.6.2.1 Proposed Action**

##### *Hazardous Waste Generation and Storage*

Implementation of the Proposed Action would not result in any substantial or long-term increase in the use, storage, or generation of hazardous materials or hazardous wastes. Use and storage of minor amounts of hazardous materials related to construction activities would increase temporarily only during construction phases of the Proposed Action. Any hazardous materials used or hazardous wastes generated as a result of implementation of the Proposed Action would be accumulated and removed in compliance with existing and approved Hazardous Waste Management Plans and related procedures. Therefore, construction-related impacts to hazardous materials and wastes would be negligible and short-term. Further, no use, generation, or storage of hazardous materials or hazardous wastes would result from long-term operation of the proposed Enlisted Dormitory or outdoor recreation court. Therefore, no long-term impacts related to hazardous waste generation and storage would occur.

## *Asbestos*

The Proposed Action would involve the construction of an Enlisted Dormitory and the demolition and relocation of the outdoor recreation court. Asbestos is present in various buildings at Cavalier AFS, and has been detected in samples during surveys in the both Bachelors Consolidated Quarters and Traffic Check House which are being assessed for potential demolition due to possible funding requirements. However, all potential Asbestos Containing Material (ACM) would be handled and disposed of according to the installation *Asbestos Management Plan* and all applicable regulations during demolition activities. Therefore, impacts associated with asbestos would be minor under implementation of the Proposed Action and

## *Environmental Restoration Program*

All ERP sites at Cavalier AFS have been officially closed and none are located within the Proposed Action site; therefore, impacts associated with the ERP would be negligible.

### 4.6.2.2 Alternative 2: No-Action Alternative

Under the No-Action Alternative, the proposed construction, demolition, and relocation would not be implemented and no additional use of hazardous materials required for construction would occur. Therefore, existing conditions with respect to hazardous materials and wastes would remain unchanged from the conditions described in Section 3.6, *Hazardous Materials and Wastes*.



## **4.7 ENVIRONMENTAL JUSTICE**

### **4.7.1 Approach to Analysis**

In order to comply with Executive Order (EO) 12898 (*Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*), ethnicity and poverty status in the vicinity of Cavalier AFS have been examined and compared to county, state, and national data to determine if any minority or low-income communities could potentially be disproportionately affected by implementation of the Proposed Action or alternatives. Similarly, to comply with EO 13045 (*Protection of Children From Environmental Health Risks and Safety Risks*), the distribution of children and locations where numbers of children may be proportionately high on and in the vicinity of Cavalier AFS was determined to ensure that environmental risks and safety risks to children are addressed.

### **4.7.2 Impacts**

#### **4.7.2.1 Proposed Action**

The Proposed Action would result in a minor increase of criteria pollutant emissions and temporary noise generated by construction equipment. However, these impacts would be negligible. The Proposed Action would take place in a sparsely populated area. According to the 2000 U.S. Census, there are only 19 people who live within 1 mile of the project area (U.S. Bureau of the Census [USBC] 2010b). There are no minorities within these census blocks and the percentage of the population below the poverty level within this area is lower than the average for Pembina County and the State of North Dakota. In addition, only four children were identified in this area (a lower percentage than the County and State). Therefore, no disproportionate impacts to minority or low-income populations or children would occur under implementation of the Proposed Action.

#### **4.7.2.2 Alternative 2: No-Action Alternative**

Implementation of the No-Action Alternative would result in no disproportionate or adverse impacts to minority or low-income populations.

Also, since no construction or installation activity would be undertaken, no short-term or long-term impacts to child health and safety would occur.

## SECTION 5

### CUMULATIVE IMPACTS

Cumulative impacts on environmental resources result from incremental impacts of the Proposed Action which, when combined with other past, present, and reasonably foreseeable future projects in an affected area, may collectively cause more substantial adverse impacts. Cumulative impacts can result from minor but collectively substantial actions undertaken over a period of time by various agencies (Federal, state, or local) or persons. In accordance with the National Environmental Policy Act (NEPA), a discussion of cumulative impacts resulting from projects which are proposed, under construction, recently completed, or anticipated to be implemented in the near future is required.

#### 5.1 OFF-BASE ACTIVITIES

Cavalier Air Force Station (AFS) is located in an extremely sparsely populated portion of Pembina County. As such, no planned or reasonably foreseeable projects are proposed in the vicinity of Cavalier AFS.

#### 5.2 ON-BASE ACTIVITIES

For the purposes of this EA, recently completed, in progress, and planned cumulative construction and demolition projects at Peterson AFB have been included for analysis of potential cumulative impacts. The following projects have been identified in the *Final Environmental Assessment Construction and Operation Water Treatment Building Cavalier Air Force Stations North Dakota* (U.S. Air Force 2010):

- Construction of a Water Treatment Facility; and
- Privatization of 14 housing units.

#### *Air Quality*

Although the scope, priority, and schedule of individual projects could potentially change, the potential exists for cumulative impacts to occur with regard to short-term air quality. However, cumulative air quality impacts are

expected to result in minor adverse impacts related to construction activities. The Proposed Action would constitute a minor contribution to these cumulative impacts given the scale of the project. Additionally, the Proposed Action and all individual projects would be required to implement best management practices (BMPs) to reduce fugitive dust and combustion emissions during construction activities to acceptable levels.

#### *Geological Resources*

With regard to geological resources, on-base cumulative project development would locally impact soils at Cavalier AFS. The Proposed Action would be confined to previously disturbed areas capable of supporting such development. In addition, individual projects would require implementation of BMPs to limit any impacts to soils which may result from construction activities including watering and/or soil stockpiling, thereby reducing the amount of exposed soil to negligible levels. Consequently, cumulative impacts to geological resources are expected to be minor and the Proposed Action's contribution to cumulative impacts would be negligible.

#### *Water Resources*

With regard to water resources, the potential exists for minor cumulative adverse impacts to occur; cumulative development could potentially result in an increase in the installation's impermeable surfaces. However, the Proposed Action would result in a net decrease in impermeable surfaces at Cavalier AFS. In addition, all projects planned at Cavalier AFS would be required to develop and implement project-specific plans (e.g., Storm Water Pollution Prevention Plan) and adhere to all applicable permitting regulations and BMPs to minimize potential impacts to water resources. Therefore, the Proposed Action would constitute a negligible contribution to this minor cumulative impact.

#### *Biological Resources*

With regard to biological resources, cumulative impacts are expected to be minor but adverse. Future developments may include the disruption and/or removal of vegetation and wildlife habitat; however, no critical habitat or sensitive species

are known to exist at Cavalier AFS and the installation's fence deters wildlife from entering the property. The Proposed Action's contribution to these cumulative impacts would be negligible.

#### *Cultural Resources*

Past archaeological surveys on the Installation have not identified any archaeological resources at Cavalier AFS. In addition, only three structures (Building 830, Building 825, and Building 820) are considered eligible for the NRHP at Cavalier AFS. These three structures would not be impacted by the Proposed Action or any other cumulative development project. Therefore, the cumulatively impacts to cultural resources would be negligible.

#### *Hazardous Materials*

The potential for overlapping cumulative construction projects could have a cumulative impact on the temporary increase of hazardous materials. All construction activities and use and disposal of hazardous materials would be handled in accordance with appropriate Air Force, federal, state and local regulations. Therefore, the Proposed Action is expected to have a negligible contribution to these cumulatively minor impacts.

#### *Environmental Justice*

Because Cavalier AFS is located in a sparsely populated area and no significant impacts are expected to occur under the Proposed Action or any other cumulative development project, no disproportionate impacts to minority or low-income populations or children would occur under cumulative development.



## SECTION 6

### SUMMARY OF FINDINGS

Summaries of environmental impacts anticipated to result from implementation of the Proposed Action at Cavalier Air Force Station (AFS) are provided in this section for the following resources:

**Air Quality.** Under implementation of the Proposed Action, fugitive dust would be generated during construction activities, including excavation, grading, and other ground-disturbing activities. Implementation of standard best management practices (BMPs) for dust control (e.g., regularly watering exposed soils, soil stockpiling, soil stabilization, etc.) would reduce potential impacts to negligible levels. Combustion emissions resulting from construction activities would be below *de minimis* thresholds for a General Conformity determination, and would not exceed 10 percent of the regional emissions inventory. Therefore, implementation of the Proposed Action would result in negligible air quality impacts and does not require a conformity analysis.

**Geological Resources.** Potential impacts to geological resources associated with implementation of the Proposed Action would be limited to ground-disturbing activities (e.g., excavation, grading) during construction or operational maintenance activities. BMPs would be implemented to minimize potential erosion, siltation, and soil compaction, and any impacts would be minor and would last only for the duration of ground-disturbing activities. No additional impacts to geological resources are anticipated to result from the Proposed Action.

**Water Resources.** Construction activities under the Proposed Action would incorporate BMPs to minimize erosion, runoff, and sedimentation, and a Phase II National Pollutant Discharge Elimination System permit would be required for construction as the Proposed Action would disturb between 1 and 5 acres of land. In addition, implementation of the Proposed Action would result in a net decrease in developed surfaces at Cavalier AFS if the potential demolition of Buildings 708 and 726 is deemed necessary due to possible funding requirements. If the demolition of Buildings 708 and 726 is not required, the

Proposed Action would result in only a slight increase in developed surfaces at Cavalier AFS. Accordingly, impacts to water resources would be minor.

**Biological Resources.** Construction activities would result in localized impacts to vegetation and wildlife due to excavation, grading, and site preparation activities. However, no critical habitat or sensitive species, or wetlands are known to exist at Cavalier AFS and the installation's fence deters wildlife from entering the property. Once constructed, the proposed facilities would have a negligible impact on biological resources.

**Cultural Resources.** No known cultural resources have been identified in the Proposed Action location. In addition, only three structures are considered eligible for the NRHP at Cavalier AFS and these structures would not be impacted by construction under the Proposed Action. Therefore, implementation of the Proposed Action would have negligible impacts to cultural resources.

**Hazardous Materials and Wastes.** Implementation of the Proposed Action would not result in any substantial or long-term increase in the use, storage, or generation of hazardous materials or hazardous wastes. Use and storage of minor amounts of hazardous materials related to construction activities would increase temporarily only during construction phases of the Proposed Action. The Proposed Action could potentially include demolition of facilities known to contain Asbestos Containing Material (ACM); however, ACM would be handled and disposed of according to the installation *Asbestos Management Plan* and all applicable regulations during demolition activities, therefore, impacts associated with asbestos would be minor.

**Environmental Justice.** The Proposed Action would not result in any significant impacts and would take place in a sparsely populated area. Therefore, no disproportionate impacts to minority or low-income populations or children would occur under implementation of the Proposed Action.



## SECTION 7

### SPECIAL PROCEDURES

Impact evaluations conducted during preparation of this Environmental Assessment have determined that no major environmental impacts would result from implementation of the Proposed Action at Cavalier Air Force Station (AFS). This determination is based on a thorough review and analysis of existing resource information, the application of accepted modeling methodologies, and coordination with knowledgeable, responsible personnel from the U.S. Air Force and relevant local, state, and Federal agencies.

In addition to standard best management practices such as implementation of control measures for reducing fugitive dust emissions, conforming to all Federal, state, and local requirements relating to storm water pollution prevention during construction activities, worker notification of potential for hazardous substance encounters during construction activities—no other special procedures are required since no significant major environmental impacts associated with implementation of the Proposed Action at Cavalier AFS would occur.



## SECTION 8

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## SECTION 9

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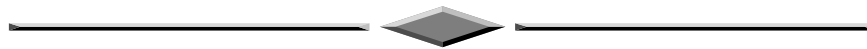
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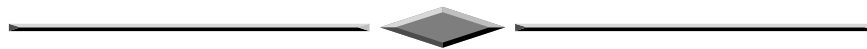
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## **APPENDIX A**

### **SUMMARY OF LEGISLATION PERTAINING TO THE PREPARATION OF THIS ENVIRONMENTAL ASSESSMENT**







## APPENDIX A

### SUMMARY OF LEGISLATION PERTAINING TO THE PREPARATION OF THIS ENVIRONMENTAL ASSESSMENT

#### NATIONAL ENVIRONMENTAL POLICY ACT

In accordance with NEPA, Federal agencies are required to integrate environmental values into their decision-making process by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions. The CEQ was established under NEPA to implement and oversee Federal policy in this process. The CEQ subsequently issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR § 1500-1508, 32 CFR part 989). These regulations specify that an EA be prepared to:

- briefly provide sufficient analysis and evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a finding of no significant impact (FONSI);
- aid in an agency's compliance with NEPA when no EIS is necessary; and
- facilitate preparation of an EIS when one is necessary.

To comply with NEPA and other pertinent environmental requirements, such as the Endangered Species Act and Clean Air Act, and to assess impacts on the environment, the decision-making process includes a study of environmental issues related to the proposed property acquisition and future development at Cavalier AFS.

#### ENDANGERED SPECIES ACT

The ESA of 1973 (16 United States Code [USC] §§ 1531-1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological

Assessment and can require formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Act

#### **CLEAN AIR ACT AND CONFORMITY REQUIREMENTS**

The Clean Air Act (CAA) (42 USC §§ 7401–7671, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. The National Ambient Air Quality Standards (NAAQS) were developed for six criteria pollutants: ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter, and lead (Pb). The Act also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, Federal agencies are required to determine whether their undertakings are in conformance with the applicable SIP and demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The USEPA has set forth regulations in 40 CFR 51, Subpart W, which require the proponent of a proposed action to perform an analysis to determine if its implementation would conform to the SIP.

#### **WATER RESOURCES REGULATORY REQUIREMENTS**

The Clean Water Act (CWA) of 1977 (33 USC §§ 1251 *et seq.*) regulates pollutant discharges that could affect aquatic life forms or human health and safety, such as those potentially released during temporary construction procedures or well development activities. Section 404 of the CWA, and Executive Order (EO) 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Section 404 also regulates development in streams and wetlands and requires a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands. EO 11988, *Floodplain Management*, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within

floodplains. Additionally, the National Pollutant Discharge Elimination System (NPDES) requires that regulated federal entities must implement stormwater pollution prevention plans (SWPPPs) or stormwater management programs (both using best management practices [BMPs]) that effectively reduce or prevent the discharge of pollutants into receiving waters.

The Department of Defense (DoD) has implemented storm water requirements under Section 438 (42 USC § 17094) of the Energy Independence and Security Act (EISA) to maintain the hydrologic functions of a site and mitigate the adverse impacts of storm water runoff from DoD construction projects. Section 438 requires that federal facility projects greater 5,000 square feet must “maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow”.

The Safe Drinking Water Act (SDWA) of 1974 intends to protect public health by regulating the nation's public drinking water supply. Most recently amended in 1996, the act requires several actions to protect drinking water and its sources, which include rivers, lakes, reservoirs, springs, and ground-water wells. The SDWA applies to every public water system in the U.S. and recognizes source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water in addition to focusing on water treatment as the means of providing safe drinking water to the public.

## **CULTURAL RESOURCES REGULATORY REQUIREMENTS**

The NHPA of 1966 (16 USC § 470) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP) which outlined procedures for the management of cultural resources on Federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The NHPA requires Federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for

maintaining their traditional culture. Section 106 of NHPA requires Federal agencies to consult with the appropriate State Historic Preservation Office (SHPO) if their undertaking might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR 800 [1986]) provides an explicit set of procedures for Federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with SHPO.

EO 13007, *Indian Sacred Sites*, directs Federal land (any land or interests in land owned by the United States, including leasehold interests held by the United States, except Indian trust lands) managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites (any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe [an Indian or Alaska Native tribe, band, nation, Pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to Public Law No. 103-454, 108 Stat. 4791, an “Indian” refers to a member of such an Indian tribe] or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion) provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established Federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–3013) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

#### **ANTITERRORISM FORCE PROTECTION**

DoD has developed AT/FP standards that are designed to reduce the likelihood of physical damage and mass casualties from potential terrorist attacks. Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Anti-terrorism Standards for Buildings*, outlines various planning, construction, and operational standards to address potential terrorist threats. A key element of AT/FP standards is the

establishment of minimum setbacks and other security standoffs between mass gathering facilities and potentially non-secure adjacent uses (e.g., parking lots, off-installation property). AT/FP setbacks typically extend outward from the sides and corners of facilities for a prescribed distance (e.g., 45 meters); development is either limited or altogether prohibited in such setback areas. Additional AT/FP standards address other facility design and operational considerations, including internal building layout, facility access and security, site circulation, and emergency mass notification.

## **SUSTAINABILITY AND GREENING**

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, strives to improve efficiency and environmental performance in Federal agencies by setting goals in the areas of energy efficiency, greenhouse gas emission mitigation, water conservation, waste management and recycling, green procurement, pollution prevention, and livable communities, among others. The EO specifies that every Federal organization and agency must make the reduction of greenhouse gas emissions a priority and establishes specific goal-setting, inventorying, and reporting requirements for Federal agencies. This includes an order for each agency to develop, implement, and update a Strategic Sustainability Performance Plan, which should work toward continual improvement of sustainable practices associated with Federal actions.

Sustainable green building and development practices can be recognized through sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. The U.S. Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings (USGBC 2008). LEED rating systems are based on a set number of prerequisites and credits in six major categories: (1) sustainable sites; (2) water efficiency; (3) energy and atmosphere; (4) materials and resources; (5) indoor environmental quality; and (6) innovation and design process (USGBC 2005). In the most recent LEED rating system (version 2.2), buildings can qualify for four levels of certification, in order from highest to lowest: platinum, gold, silver, and certified. Benefits of constructing LEED-

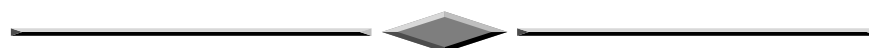
certified facilities include lower operating costs and increased asset value, reduced waste sent to landfills, conservation of energy and water, healthier and safer facilities for occupants, reduction of harmful greenhouse gas emissions that incrementally contribute to global climate change, and the demonstration of an owner's commitment to environmental stewardship and social responsibility.

#### **OTHER EXECUTIVE ORDERS**

Additional regulatory legislation that potentially applies to the implementation of this proposal includes guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that citizens in either of these categories are not disproportionately affected. Potential health and safety impacts that could disproportionately affect children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, acts as additional protection for migratory birds.

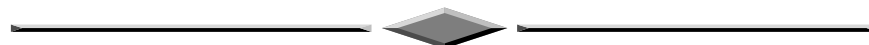
#### **INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)**

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is a federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions. As detailed in 40 CFR § 1501.4(b), CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the IICEP process, the USAF will notify relevant Federal, state, and local agencies and allow them sufficient time to make known their environmental concerns specific to a proposed action. Comments and concerns submitted by these agencies during the IICEP process are subsequently incorporated into the analysis of potential environmental impacts conducted as part of the EA.



## **APPENDIX B**

### **AIR EMISSION FACTORS AND ASSUMPTIONS**







## APPENDIX B

### AIR EMISSION FACTORS AND ASSUMPTIONS

#### B.1 FUGITIVE DUST EMISSIONS ASSOCIATED WITH CONSTRUCTION ACTIVITIES

**Table B-1. Disturbed Land Area from Construction-Related Activities**

Construction Operation	Proposed Action (Alternative 1)	No-Action Alternative (Alternative 2)
	Area	Area
<b>Grading/Leveling/ Staging</b>		
Enlisted Dormitory	12,750 sf	---
New Outdoor Recreation Court	14,750 sf	---
<b>Demolition</b>		---
Existing Outdoor Recreation Court	9,594 sf	---
Bachelor Consolidated Quarters	10,400 sf	---
Traffic Check House	104 sf	---
<b>Total area</b>	<b>47,598 sf</b>	<b>0 sf</b>
<b>Total area</b>	<b>1.09 acres</b>	<b>0 acres</b>

#### B.2 COMBUSTION EMISSIONS ASSOCIATED WITH CONSTRUCTION ACTIVITIES

**Table B-3. Construction-Related Combustion Emission Factors Associated with Construction of the Enlisted Dormitory, and Demolition and Relocation of the Outdoor Recreation Court**

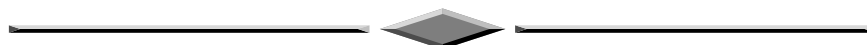
Equipment	Days	Hours of Operation	Emission Factors (lbs/hr)					
			CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	ROG
grader	120	1,200	0.567	1.623	0.084	0.077	0.276	0.148
loader	120	1,200	0.424	0.858	0.086	0.079	0.115	0.132
bobcat	120	1,200	0.268	0.508	0.054	0.050	0.0	0.09
dozer	120	1,200	1.209	3.037	0.123	0.113	0.453	0.232
excavator	120	1,200	1.300	4.600	0.320	0.310	0.740	0.340

ROG = reactive organic gasses

Source: USEPA 1995

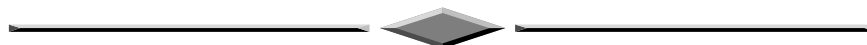
Construction Assumptions: 6 month construction period, 4 weeks/month, 5 work days per week, 10 hours per work day; 1,200 hours of operation total.





## **APPENDIX C**

### **IICEP CORRESPONDENCE**





**APPENDIX C**  
**IICEP DISTRIBUTION LIST**

North Dakota State Water  
Commission  
900 East Boulevard Avenue, Dept 770  
Bismarck, ND 58505-0850

Mr. Jeff Towner  
U.S. Fish and Wildlife Service  
North Dakota Field Office  
3425 Miriam Avenue  
Bismarck, ND 58501-7926

U.S. Fish and Wildlife Service  
Migratory Bird Office  
P.O. Box 25486 DFC  
Denver, CO 80225

Mr. Dean Hildebrand, Commissioner  
North Dakota Game and Fish  
100 North Bismarck Expressway  
Bismarck, ND 58505-5095

Ms. Susan Quinnell  
Review and Compliance Coordinator  
State Historical Society of North  
Dakota  
612 East Boulevard Avenue  
Bismarck, ND 58505-0830

Mr. Dennis Fewless  
North Dakota Department of Health  
Environmental Health Section  
918 East Divide Avenue  
Bismarck, ND 58501-1947

Mr. Terry O'Clair  
North Dakota Department of Health  
Environmental Health Section  
918 East Divide Avenue  
Bismarck, ND 58501-1947

Tribal Historic Preservation Officer  
Indian Affairs Commission  
600 East Boulevard Avenue  
Bismarck, ND 58505-0300

Bismarck Regulatory Office  
U.S. Army Corps of Engineers  
1513 South 12<sup>th</sup> Street  
Bismarck, ND 58504

Ms. Caroline D. Hall  
Advisory Council on Historic  
Preservation  
1100 Pennsylvania Avenue NW,  
Suite 803  
Washington, DC 20004

## TRIBAL DISTRIBUTION LIST

Dale Hamilton, Arapaho Coordinator  
Cheyenne and Arapaho Tribes of  
Oklahoma  
Cultural and Heritage Program  
P.O. Box 38  
Concho, OK 73022

Steve Vance, THPO  
Cultural Preservation Office  
Cheyenne River Sioux Tribe  
P.O. Box 590  
Eagle Butte, SD 57625

Dale Old Horn, THPO  
Tribal Historic Preservation Office  
The Crow Tribe of Indians  
P.O. Box 159  
Crow Agency, MT 59022

Curley Youpee, THPO  
Tribal Historic Preservation Office  
Fort Peck Assiniboine Sioux Tribe  
P.O. Box 1027  
Poplar, MT 59255

Gina Lemon, THPO  
Tribal Historic Preservation Office  
Leech Lake Chippewa Tribe  
115 6<sup>th</sup> Street, NW  
Suite E  
Cass Lake, MN 56633

Conrad Fisher, THPO  
Tribal Historic Preservation Office  
Northern Cheyenne Tribe  
P.O. Box 128  
Lame Deer, MT 59043

Dianne Desrosiers, THPO  
Tribal Historic Preservation Office  
Sisseton-Wahpeton Oyate  
P.O. Box 907  
Sisseton, SD 59043

The Honorable Phillip Longie  
Spirit Lake Sioux Tribe  
P.O. Box 359  
Fort Totten, ND 58335

Waste'Win Young, THPO  
Tribal Historic Preservation Office  
Standing Rock Sioux Tribe  
P.O. Box D  
Fort Yates, ND 58538

Perry Brady, THPO  
Tribal Historic Preservation Office  
Three Affiliated Tribes  
P.O. Box D  
Fort Yates, ND 58538

Kade Ferris, THPO  
Tribal Historic Preservation Office  
Turtle Mountain Band of Chippewa  
Indians  
P.O. Box 900  
Belcourt, ND 58316

Tom McCauley, THPO  
Tribal Historic Preservation Office  
White Earth Band of Minnesota  
Chippewa  
P.O. Box 418  
White Earth, MN 56591

Lana Gravatt, THPO  
Tribal Historic Preservation Office  
Yankton Sioux Tribe  
P.O. Box 248  
Marty, SD 57361



DEPARTMENT OF THE AIR FORCE  
21ST SPACE WING (AFSPC)

MAY 18 2011

MEMORANDUM FOR DISTRIBUTION

FROM: 10 SWS/CC  
830 Patrol Road #260  
Cavalier Air Force Station, North Dakota 58220

SUBJECT: Draft Environmental Assessment for Proposed Enlisted Dormitory at Cavalier Air Force Station, North Dakota

1. The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS). The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities.
2. The environmental impact analysis process for the Proposed Action and alternatives is being conducted by the Air Force Space Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments concerning the proposal and any potential environmental consequences. Also enclosed is the distribution list of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposal, please include them in your distribution of this letter and the attached materials.
3. Please provide, directly to Mr. Robert Fors, 10 SWS/MS, 830 Patrol Road #260, Cavalier AFS, North Dakota 58220, any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter.
4. If members of your staff have any questions, please contact Mr. Fors, 10 SWS/MS, via telephone at (701) 993-3687, or via email at [robert.fors.cavalier.af.mil](mailto:robert.fors.cavalier.af.mil).

  
JOHN R. THOMAS, Lt Col, USAF  
Commander

- 2 Attachments:
1. Draft EA
  2. Distribution List

**APPENDIX C**  
**IICEP DISTRIBUTION LIST**

North Dakota State Water  
Commission  
900 East Boulevard Avenue, Dept  
770  
Bismarck, ND 58505-0850

Mr. Jeff Towner  
U.S. Fish and Wildlife Service  
North Dakota Field Office  
3425 Miriam Avenue  
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U.S. Fish and Wildlife Service  
Migratory Bird Office  
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Dakota  
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North Dakota Department of Health  
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918 East Divide Avenue  
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North Dakota Department of Health  
Environmental Health Section  
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Tribal Historic Preservation Officer  
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1513 South 12<sup>th</sup> Street  
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Ms. Caroline D. Hall  
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1100 Pennsylvania Avenue NW,  
Suite 803  
Washington, DC 20004

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Lana Gravatt, THPO  
Tribal Historic Preservation Office  
Yankton Sioux Tribe  
P.O. Box 248  
Marty, SD 57361

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## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Dale Hamilton, Arapaho Coordinator  
Cheyenne and Arapaho Tribes of Oklahoma  
Cultural and Heritage Program  
P.O. Box 38  
Concho, OK 73022

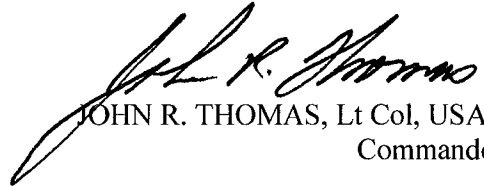
Dear Mr. Hamilton:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Cheyenne and Arapaho Tribes of Oklahoma.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA

cc: Karen Little Coyote, Cheyenne Coordinator



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Dale Hamilton, Arapaho Coordinator  
Cheyenne and Arapaho Tribes of Oklahoma  
Cultural and Heritage Program  
P.O. Box 38  
Concho, OK 73022

Dear Mr. Hamilton:

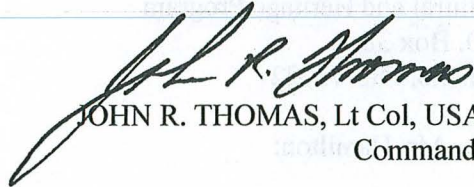
The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

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STRENGTH AND PREPAREDNESS

MAY 18 2001

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JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA

cc: Karen Little Coyote, Cheyenne Coordinator



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Steve Vance, THPO  
Cultural Preservation Office  
Cheyenne River Sioux Tribe  
P.O. Box 590  
Eagle Butte, SD 57625


Dear Mr. Vance:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

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JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA





## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Dale Old Horn, THPO  
Tribal Historic Preservation Office  
The Crow Tribe of Indians  
P.O. Box 159  
Crow Agency, MT 59022

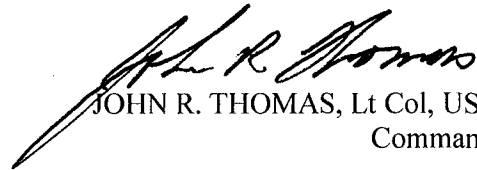
Dear Mr. Old Horn:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

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JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Curley Youpee, THPO  
Tribal Historic Preservation Office  
Fort Peck Assiniboine Sioux Tribe  
P.O. Box 1027  
Poplar, MT 59255

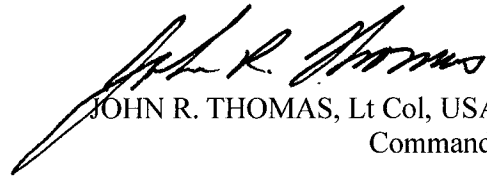
Dear Mr. Youpee:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

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JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Gina Lemon, THPO  
Tribal Historic Preservation Office  
Leech Lake Chippewa Tribe  
115 6<sup>th</sup> Street, NW  
Suite E  
Cass Lake, MN 56633

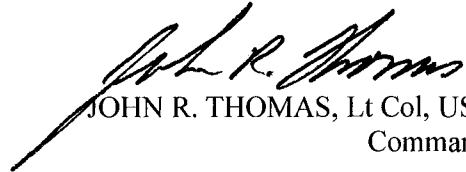
Dear Ms. Lemon:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

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STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Leech Lake Chippewa Tribe.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Conrad Fisher, THPO  
Tribal Historic Preservation Office  
Northern Cheyenne Tribe  
P.O. Box 128  
Lame Deer, MT 59043

Dear Mr. Fisher:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

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JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA





## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

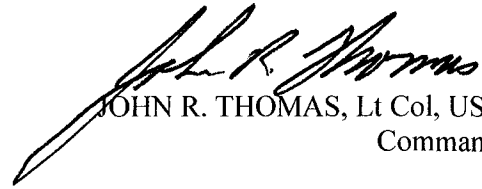
Dianne Desrosiers, THPO  
Tribal Historic Preservation Office  
Sisseton-Wahpeton Oyate  
P.O. Box 907  
Sisseton, SD 59043

Dear Ms. Desrosiers:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Sisseton-Wahpeton Oyate.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

The Honorable Phillip Longie  
Spirit Lake Sioux Tribe  
P.O. Box 359  
Fort Totten, ND 58335

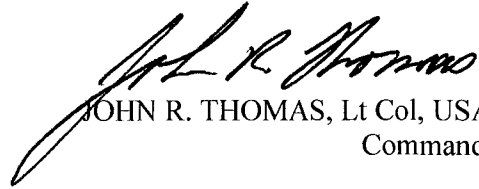
Dear Chariman Longie:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Spirit Lake Sioux Tribe.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Waste' Win Young, THPO  
Tribal Historic Preservation Office  
Standing Rock Sioux Tribe  
P.O. Box D  
Fort Yates, ND 58538

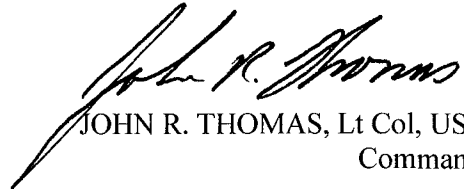
Dear Ms. Young:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Standing Rock Sioux Tribe.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Perry Brady, THPO  
Tribal Historic Preservation Office  
Three Affiliated Tribes  
P.O. Box D  
Fort Yates, ND 58538

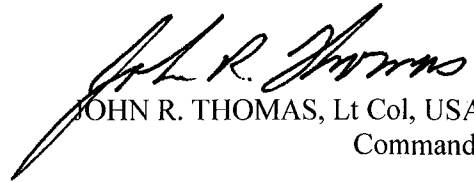
Dear Mr. Brady:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Three Affiliated Tribes.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA





## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Kade Ferris, THPO  
Tribal Historic Preservation Office  
Turtle Mountain Band of Chippewa Indians  
P.O. Box 900  
Belcourt, ND 58316

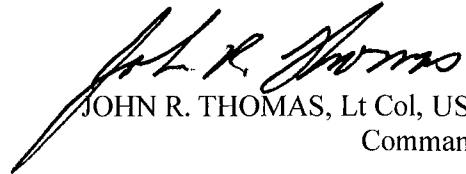
Dear Mr. Ferris:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Turtle Mountain Band of Chippewa Indians.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



## DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

Tom McCauley, THPO  
Tribal Historic Preservation Office  
White Earth Band of Minnesota Chippewa  
P.O. Box 418  
White Earth, MN 56591

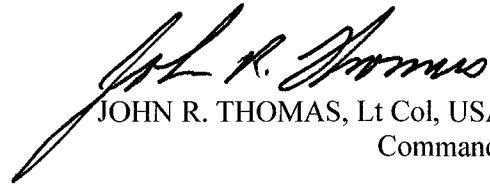
Dear Mr. McCauley:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

STRENGTH AND PREPAREDNESS

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the White Earth Band of Minnesota Chippewa.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA



DEPARTMENT OF THE AIR FORCE  
21ST SPACE WING (AFSPC)

MAY 18 2011

Lieutenant Colonel John R. Thomas  
Commander, 10th Space Warning Squadron  
830 Patrol Road #260  
Cavalier AFS, ND 58220

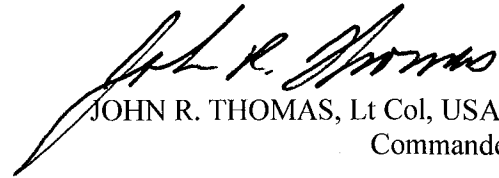
Lana Gravatt, THPO  
Tribal Historic Preservation Office  
Yankton Sioux Tribe  
P.O. Box 248  
Marty, SD 57361

Dear Ms. Gravatt:

The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota. The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities. The Draft EA is included with this correspondence as an attachment.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Cavalier AFS is required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with these legal mandates, federally recognized and state recognized tribes that are affiliated historically with the geographic region within which Cavalier AFS occurs must be allowed to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Please accept this letter to initiate consultation with your tribe regarding this action.

I request your participation by reviewing the attached Draft EA and solicit your comments concerning the Proposed Action and any potential impacts or concerns you may have. Please contact me at (701) 993-3297 if you would like to discuss this action further or schedule a meeting in person. Please provide any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter. Thank you for your participation. We appreciate the opportunity to continue our working relationship with the Yankton Sioux Tribe.



JOHN R. THOMAS, Lt Col, USAF  
Commander

Attachment:  
Draft EA

# AFFIDAVIT OF PUBLICATION

STATE OF NORTH DAKOTA, )  
County of Pembina ) ss.

Timothy J. Schroeder, being first duly sworn, on his/her oath deposes and says; that THE CAVALIER CHRONICLE is a weekly newspaper of general circulation printed and published in the City of Cavalier, County of Pembina and State of North Dakota, by Chronicle Publishing Co., that it has complied with all requirements of the laws of the State of North Dakota concerning legal publications, is now, and during all the times hereinafter mentioned has been a legal newspaper; that deponent is the President of said Cavalier Chronicle in charge of the advertising and the advertisement of Notice of Availability, a printed copy of which is hereto annexed, was printed and published in every copy of each issue of said Cavalier Chronicle for a period of one consecutive weeks, to-wit:

June 1, 20 11 52 1@\$.70, 20 \_\_\_\_\_  
\_\_\_\_\_, 20 \_\_\_\_\_, 20 \_\_\_\_\_  
\_\_\_\_\_, 20 \_\_\_\_\_, 20 \_\_\_\_\_

*Timothy J. Schroeder*

Subscribed and sworn to before me this 1 day  
of June, A.D., 20 11.

DELORES M. KEMP  
Notary Public  
State of North Dakota  
My Commission Expires Mar. 13, 2016

*Delores M. Kemp*  
NOTARY PUBLIC

## Notice of Availability Draft Environmental Assessment Proposed Enlisted Dormitory at Cavalier Air Force Station

Interested parties are hereby notified that the US Air Force (USAF) has prepared a Draft Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS), North Dakota.

**Statutory Authority.** This notice is being issued to interested parties in accordance with the National Environmental Policy Act (Public Law [PL] 91-190, 42 US Code 4321 et seq.) as amended in 1975 by PL 94-52 and PL 94-83.

**Purpose.** The purpose of the Proposed Action is to provide a quality dormitory facility that enhances mission effectiveness by providing proper living conditions. The current dormitory for unaccompanied personnel at Cavalier AFS is in fair-to-poor condition and has insufficient ventilation, lighting, and electrical systems.

**Proposed Action.** The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities.

**Comments.** Public comments and inquiries on the Draft EA should be directed to Mr. Robert Fors, 10 SWS/MS, 830 Patrol Road #260, Cavalier AFS, North Dakota 58220 or by email at robert.fors@cavalier.af.mil. Electronic copies of the Draft EA are available at [http://12.23.244.78/CavalierAFS\\_EA/](http://12.23.244.78/CavalierAFS_EA/). Copies of the Draft EA will also be available for review beginning 1 June 2011 at the Cavalier Central Public Library, 106a W 2nd Ave. South, Cavalier, ND 58220. The comment period is open for 30 days and will end on 30 June 2011.

Pub \_\_\_\_\_  
(June 1, 2011)  
Affi \_\_\_\_\_

Total.....\$ 36.40

Received Payment.  
\_\_\_\_\_





# Leech Lake Band of Ojibwe



Arthur "Archie" Larose, Chairman  
Ms. Robbie Howe, Acting Secretary/Treasurer

District I Representative  
Ms. Robbie Howe

District II Representative  
Steve White

District III Representative  
Eugene "Ribs" Whitebird

May 26, 2011

Lieutenant Colonel John R. Thomas  
Commander, 10<sup>th</sup> Space Warning System  
830 Patrol Road #260  
Cavalier AFS, ND 58220

RE: **Proposed Enlisted Dormitory**  
Cavalier Air Force Station, North Dakota  
**LL-THPO Number: 11-085-NCRI**

Dear Lieutenant Colonel Thomas:

Thank you for the opportunity to comment on the above-referenced project. It has been reviewed pursuant to the responsibilities given the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992 and the Procedures of the Advisory Council on Historic Preservation (38CFR800).

**I have reviewed the documentation; after careful consideration of our records, I have determined that the Leech Lake Band of Ojibwe does not have any known recorded sites of religious or cultural importance in these areas.**

*Should any human remains or suspected human remains be encountered, all work shall cease and the following personnel should be notified immediately in this order: County Sheriff's Office and Office of the State Archaeologist. If any human remains or culturally affiliated objects are inadvertently discovered this will prompt the process to which the Band will become informed.*

Please note: The above determination does not "exempt" future projects from Section 106 review. In the event of any other tribe notifying us of concerns for a specific project, we may re-enter into the consultation process.

You may contact me at (218) 335-2940 if you have questions regarding our review of these projects. Please refer to the LL-THPO Number as stated above in all correspondence with this project.

Respectfully submitted,

Gina M. Lemon  
Tribal Historic Preservation Officer

---

**Leech Lake Tribal Historic Preservation Office \* Established in 1996**

An office within the Division of Resource Management  
115 Sixth Street NW, Suite E \* Cass Lake, Minnesota 56633  
(218) 335-2940 \* FAX (218) 335-2974  
[glemon@live.com](mailto:glemon@live.com) or [www.nathpo.org](http://www.nathpo.org) (Active Members since 1998)





# DEPARTMENT OF THE AIR FORCE

21ST SPACE WING (AFSPC)

MAY 18 2011

## MEMORANDUM FOR DISTRIBUTION

FROM: 10 SWS/CC  
830 Patrol Road #260  
Cavalier Air Force Station, North Dakota 58220

SUBJECT: Draft Environmental Assessment for Proposed Enlisted Dormitory at Cavalier Air Force Station, North Dakota

1. The Air Force Space Command is preparing an Environmental Assessment (EA) for Proposed Enlisted Dormitory at Cavalier Air Force Station (AFS). The Proposed Action comprises the construction of a one-story Enlisted Dormitory and demolition and relocation of an existing outdoor recreation court at Cavalier AFS. In addition, the Bachelor Consolidated Quarters and the Traffic Check House would potentially be demolished and as part of the Proposed Action in the event that funding requirements prohibit any increase in the overall square footage of Cavalier AFS facilities.

2. The environmental impact analysis process for the Proposed Action and alternatives is being conducted by the Air Force Space Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments concerning the proposal and any potential environmental consequences. Also enclosed is the distribution list of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposal, please include them in your distribution of this letter and the attached materials.

3. Please provide, directly to Mr. Robert Fors, 10 SWS/MS, 830 Patrol Road #260, Cavalier AFS, North Dakota 58220, any written comments or information regarding the action at your earliest convenience but no later than 30 days from the receipt of this letter.


4. If members of your staff have any questions, please contact Mr. Fors, 10 SWS/MS, via telephone at (701) 993-3687 or via email at [robert.fors@cavalier.af.mil](mailto:robert.fors@cavalier.af.mil).

### U.S. FISH AND WILDLIFE SERVICE ECOLOGICAL SERVICES ND FIELD OFFICE

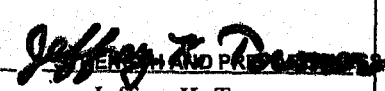
Project as described will have no significant impact on fish and wildlife resources. No endangered or threatened species are known to occupy the project area and/or are not likely to be adversely affected. IF PROJECT DESIGN CHANGES ARE MADE, PLEASE SUBMIT PLANS FOR REVIEW.

#### 2 Attachments:

1. Draft EA
2. Distribution List

  
JOHN R. THOMAS, Lt Col, USAF  
Commander

5/20/2011  
Date

  
Jeffrey K. Towner  
Field Supervisor

